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MOTOR BOATING

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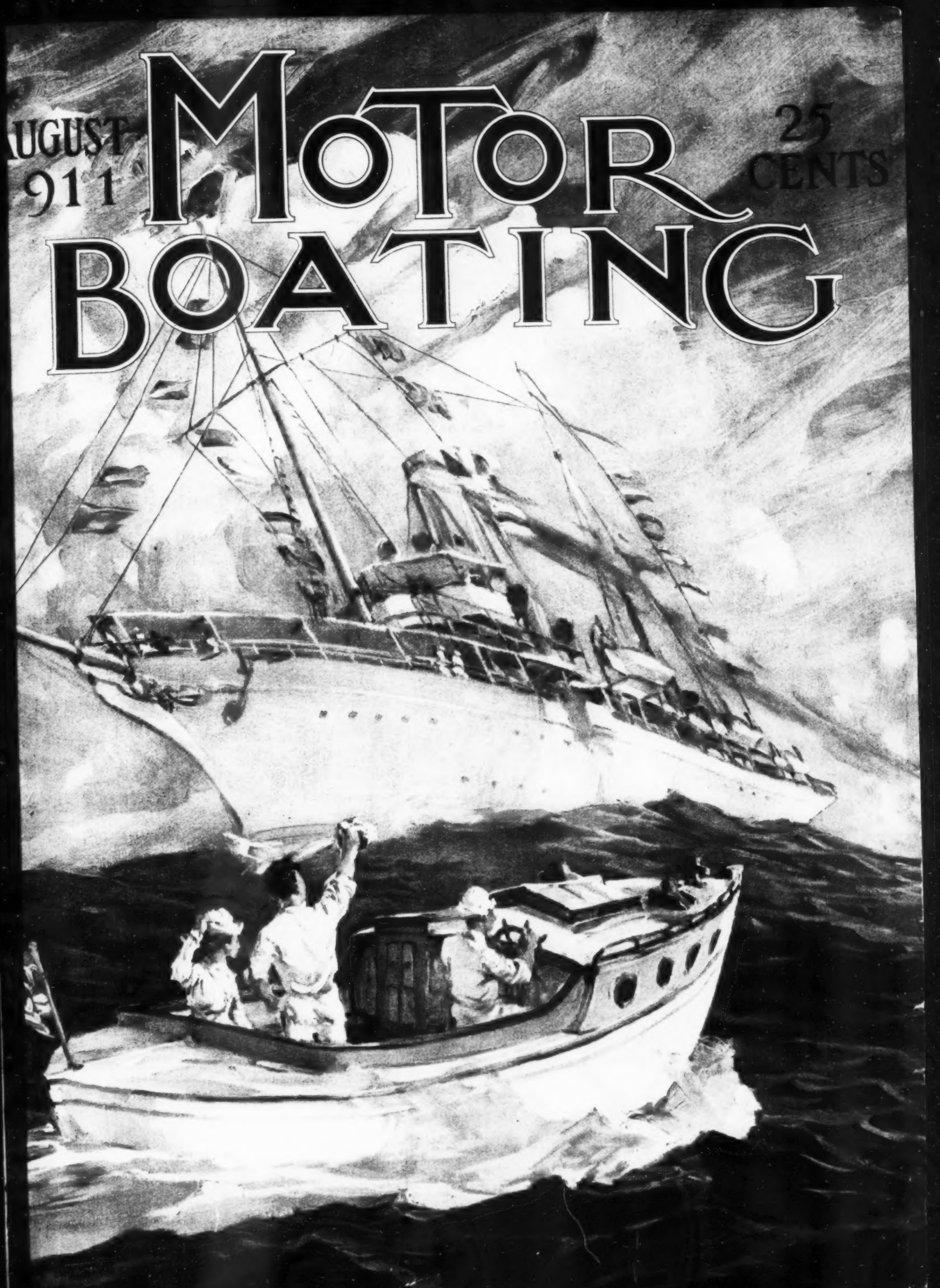

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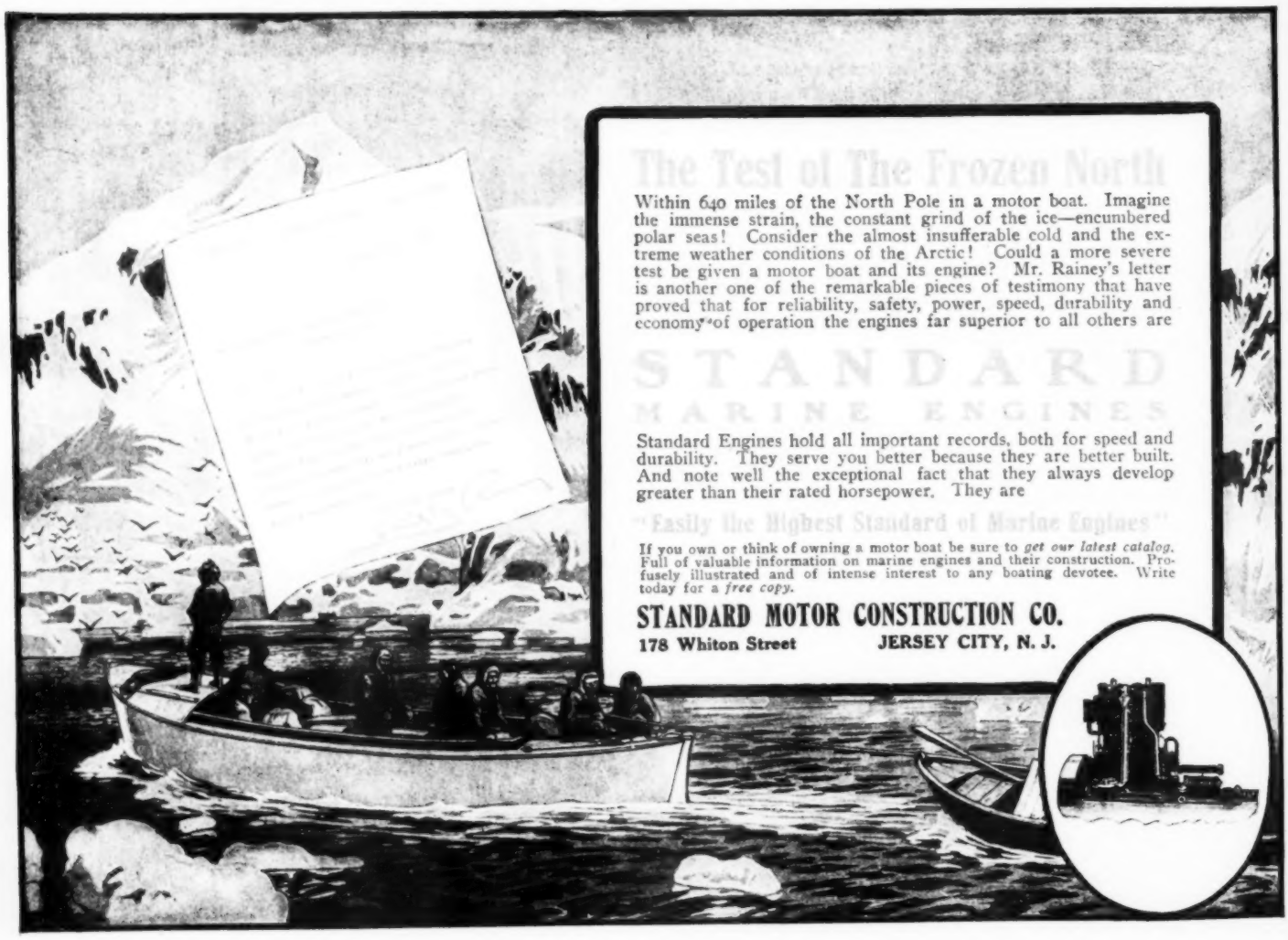

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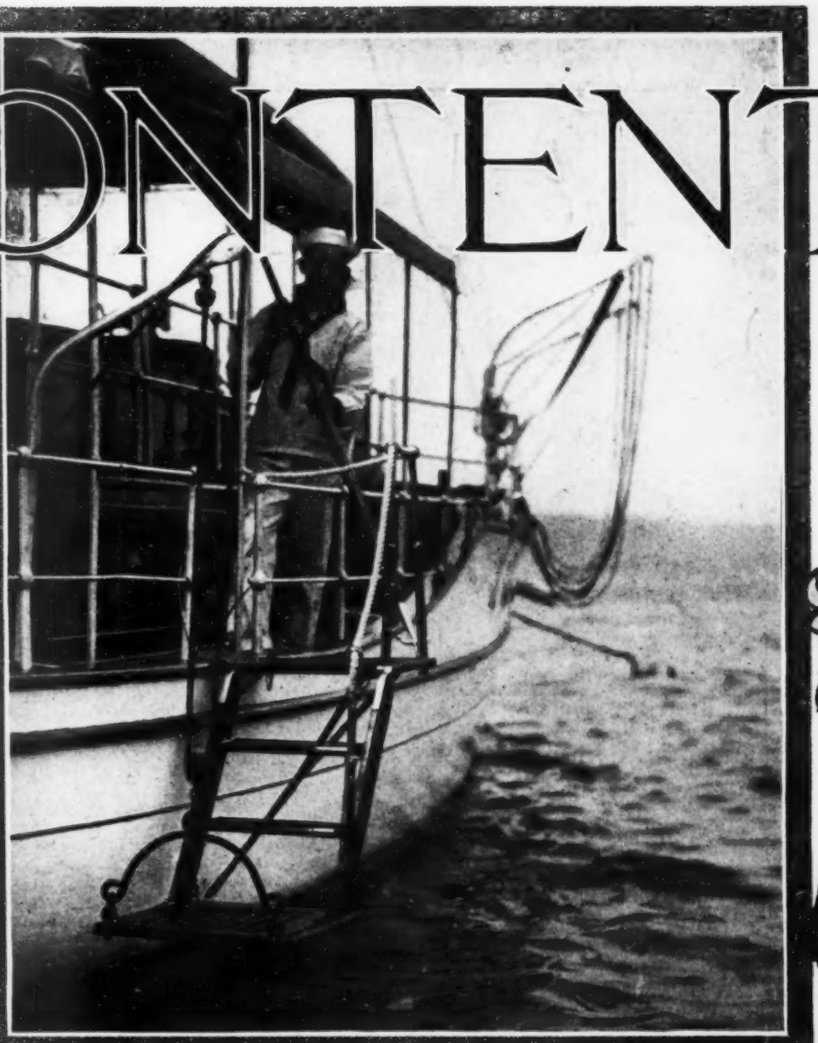

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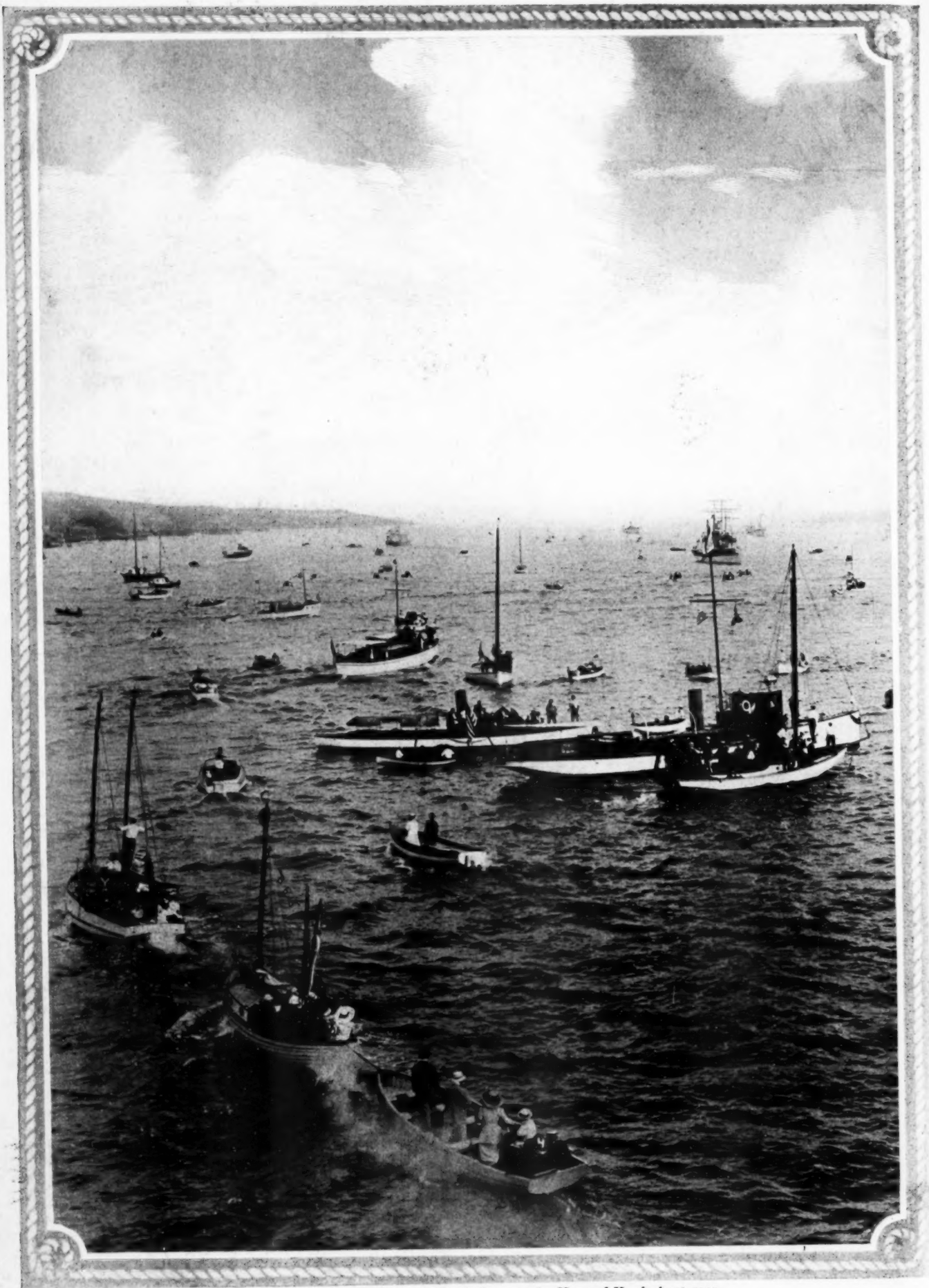


Motor boats of all kinds and descriptions at the Harvard-Y ale boat race.

The Race to Halifax.

How Caroline Won the Hearst Reciprocity Trophy from Eronel, Snap Shot III and Tramp Real Weather at the Finish Which Did Some Damage and Caused Delay.

AT exactly 1.30.30 A. M., Tuesday, July 25th, the all-night watchers at the clubhouse of the Royal Nova Scotia Yacht Squadron glimpsed through the blinding rain of the southeast gale which swept the harbor, the signal light of the first boat to cross the finish line of the New York to Halifax Reciprocity Race for the trophy offered by William Randolph Hearst, Commodore of the National Yacht Club. The signal was unexpected, for the storm had carried away the boat's running lights, and no one knew she was in the harbor till the light flashed forth. After that it was nearly two hours before her identity was disclosed. For it was not till 3 A. M., when M. Frank Dennis came ashore to wire home that the committee and their fellow yachtsmen knew that the first boat to finish was Caroline. It was a dramatic finish of a big race.

Summary of Reciprocity Race.

Boat.	Finish July 25.	Elapsed time.	Corrected time.
Caroline	1:30:30 A.M.	58:30:30	42:29:01
Eronel	8:37:50 A.M.	65:37:20	49:16:02

Snap Shot III—Not reported at time of going to press. Tramp—Withdrew.

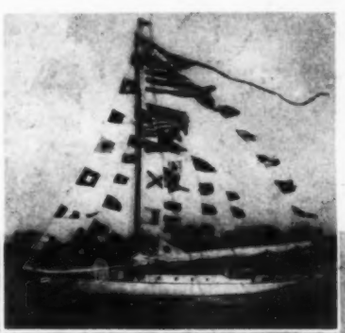
Caroline had to give her nearest rival, Eronel, an allowance of but 20 minutes and 29 seconds; so her owner and crew had not long to wait before knowing that their boat had won. It was several hours, however, before Eronel came into the harbor, crossing the line at 8:37:50 A. M. Her elapsed time was 65:37:20, as against "Caroline's" 58:30:30, and her corrected time was 49:16:02 as against her rival's 42:29:01, making Caroline the winner by 6 hours, 47 minutes, 1 second.

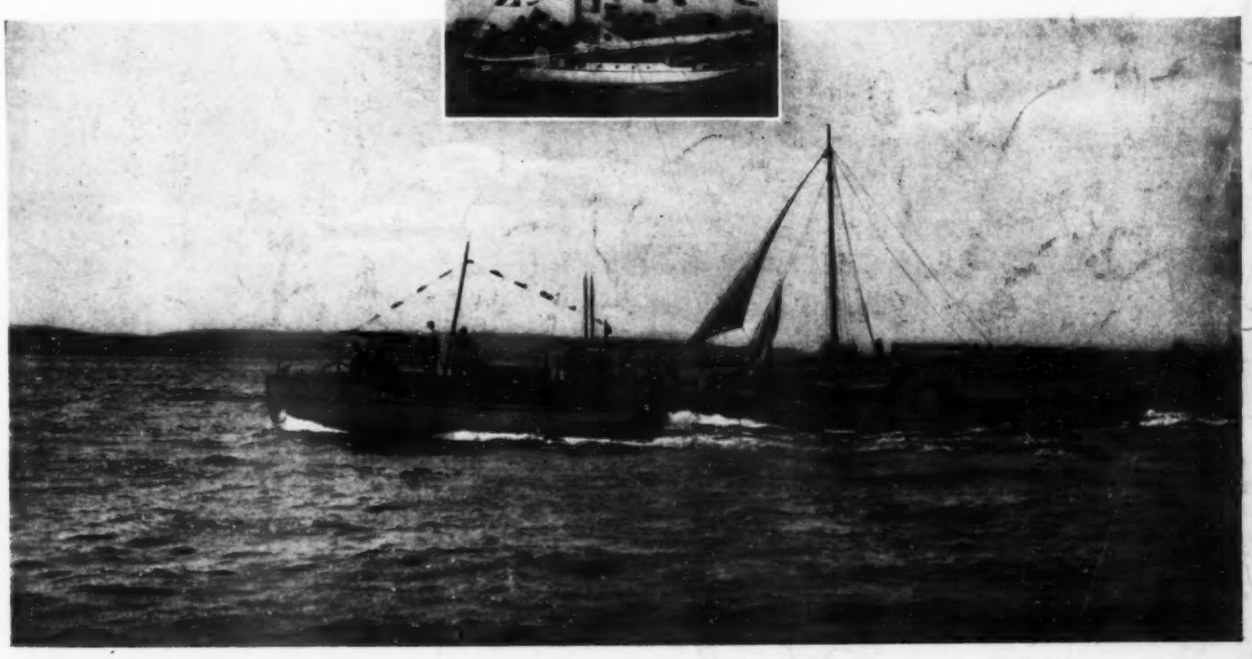
Tramp, the scratch boat, had covered less than 200 miles of the course when her crew became convinced that her continuance in the race was useless, and so abandoned the attempt to plug through to Halifax in a boat which had been converted into a sea-going cruiser only by temporary canvas topsides.

Snap Shot III was still unheard from, and as the day passed and she did not appear, interest became centered on this contestant, which had on board the only woman to take part in the race. Early in the day a report came in that she had gone ashore near Yarmouth, but later it was discovered that the boat which had come into this unfortunate plight was not Snap Shot III, but the motor boat Romania, which sailed from Bridgeport, Conn., on Saturday, in an attempt to cross the Atlantic. Her navigator, Captain N. H. Small, was trying to get in to Halifax to replenish his gasoline supply, when he apparently went astray on his bearings in the thick weather and the stranding of the boat resulted, and forced an unhappy ending to a big endeavor.

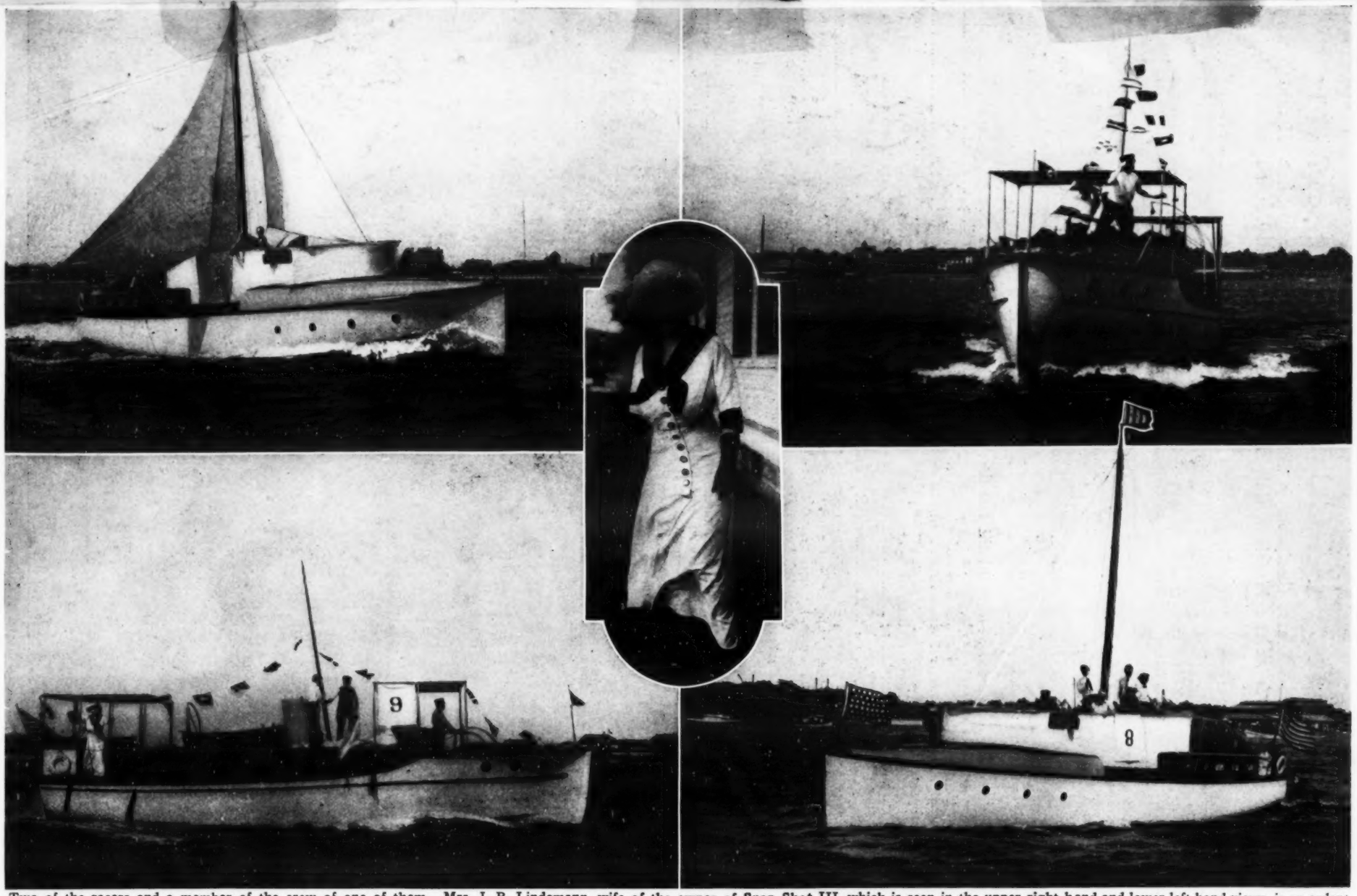
The yachts encountered a sharp contrast of weather conditions during the run. The smooth sea which attended them at the start on Saturday, kept them company for the first twenty-four hours. Then the water gradually roughened and the sea-going qualities of the boats came into test. By Monday night the southeast wind had assumed the proportions of a forty-mile gale, kicking up a tremendous sea off the Nova Scotian coast. Eronel ran into the blow about 9 P. M. on that night and owing to its severity she was obliged to stand off shore in the heavy sea before running for the harbor. At about midnight, when Caroline was but a short distance from the harbor and the finish line her steering gear became disabled. For twenty minutes the boat ran wild, and when her little mainsail gybed, her jib and side lights were carried away. Proximity to land and breakers did not lessen the anxiety of her crew during these moments, but repairs were finally effected and a course laid for the harbor. Caroline did not take the course through Vineyard Sound, but passed to the south of Nantucket Island and a few miles north of the Nantucket South Shoals Light Vessel. From there she shaped her course for Cape Sable, which she missed by thirteen miles, owing to faulty compass adjustment. Eronel left Pollock Rip at 2 P. M. Sunday, and sighted Cape Sable at 11:30 A. M. Monday.

The performance of the engines of Caroline and Eronel under these trying conditions was eminently satisfactory. Spray entering through a transom and a boarding sea short circuited Caroline's ignition system for a short time, but the powerful Holmes motor did not stop. Under the personal supervision of her maker, James Craig, Eronel's 37 horse power Craig motor did not miss a stroke. The Halifax Reciprocity Race of 1911 furnishes still another evidence of the now thorough reliability and dependability of the marine internal combustion engine, while the sea-going qualities of the modern type of cruising motor boat were abundantly proven. It is apparent that notwithstanding the fate of Romania, Atlantic crossings by motor boat will soon be of frequent occurrence.

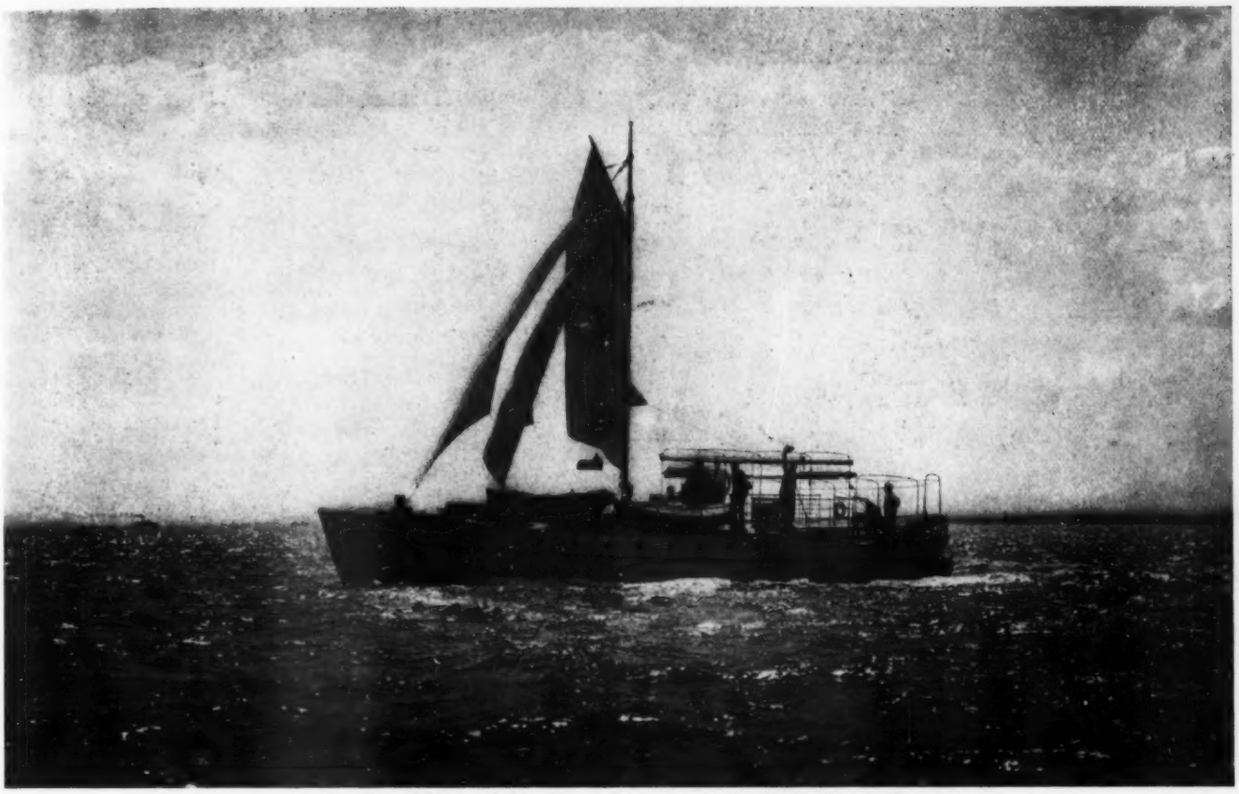




At the start—Snap Shot III and Caroline getting away.



Two of the racers and a member of the crew of one of them. Mrs. J. B. Lindemann, wife of the owner of Snap Shot III, which is seen in the upper right hand and lower left hand views, is an ardent "motor boatiste" and the only woman in the race. The upper left hand and lower right hand views show Eronel in racing trim.



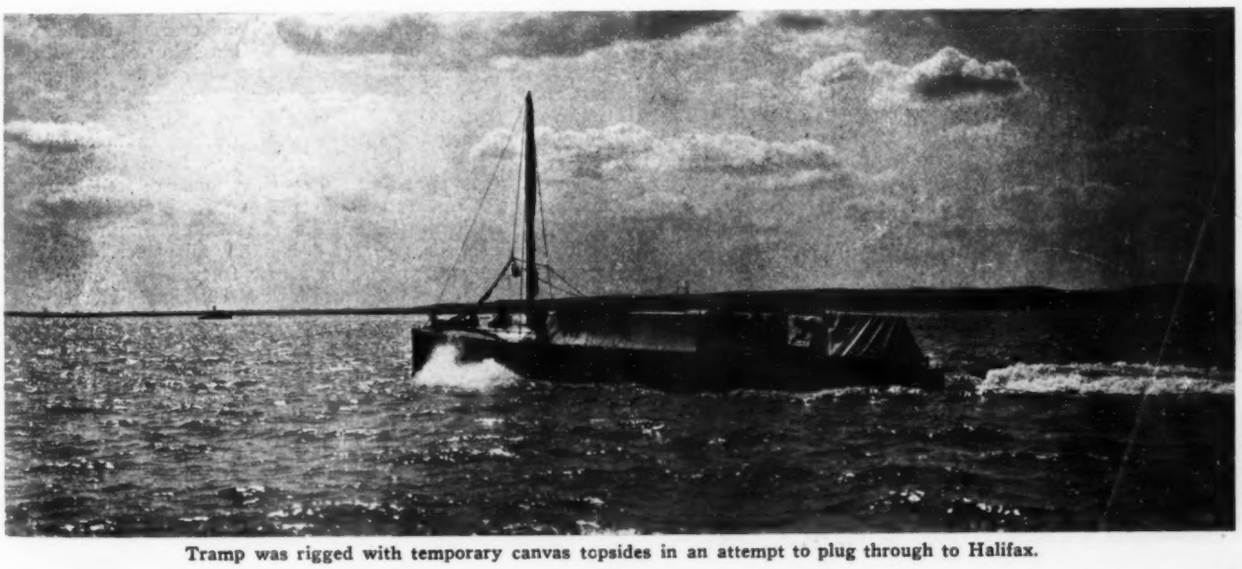
Caroline, with a good amount of canvas out, beginning her long run.

There was standing room only and not much of that down at the comfortable Bensonhurst home of the National Yacht Club the evening before the race; one of the largest crowds ever seen there turning out to shake hands with the owners, officers, and crews of the entrants, to wish them every success and, incidentally, to furnish conclusive evidence of the sustained and ever-growing general interest in long distance motor boat racing in the open.

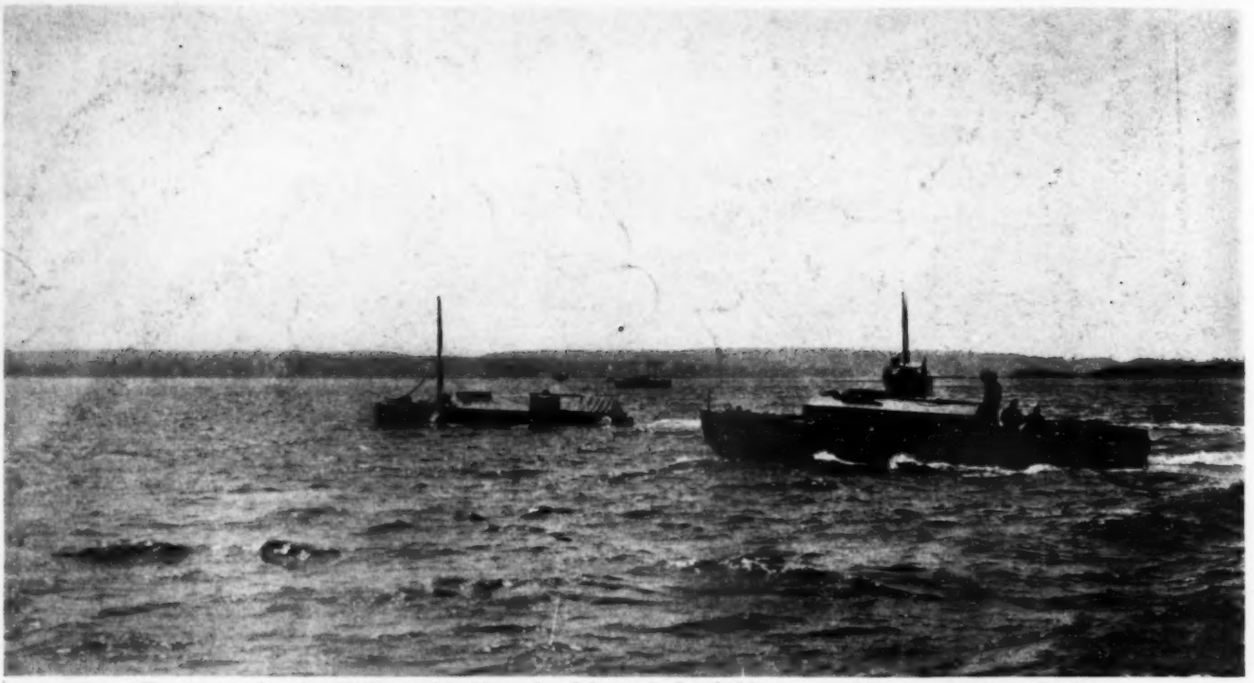
Next morning, Saturday, July 22, was an ideal one for the start,—clear and crisp, with a fresh breeze coming from somewhere off to the northwest. The morning was, of course, spent by the racers in making the usual final preparations, and it was a mighty busy one for a certain small collection of individuals. Finally, at precisely 2:40 P. M. the starting gun was fired, and Tramp, followed closely by Snap Shot III, Caroline and Eronel, crossed the line and headed for the Ambrose Channel Lightship, escorted down the Bay by the customary fleet of pleasure craft and greeted with the usual din of countless whistles, ranging all the way from accents of high falsetto to the deep-throated notes of basso profundo. The lightship, which

The Boats that Competed for the Hearst Reciprocity Trophy.

Name.	Length.	Beam.	Engine.	H. P.	Rating.	Time Allowance. H. M. S.	Owner.
Caroline	66.15	13.96	Holmes	56	46.31	16:01:29	M. F. Dennis
Eronel	45.11	8.69	Craig	37	46.00	16:21:18	Sam'l Cochrane
Snap Shot III....	40.04	10.26	Van Blerck	39	45.76	16:34:18	J. B. Lindeman
Tramp	40.08	7.39	Van Blerck	47	68.32	Scratch	H. S. Duell



Tramp was rigged with temporary canvas topsides in an attempt to plug through to Halifax.



Tramp, starting for Halifax, with Alexander Johnston's Inevitable as one of her escorts down the bay.

has seen the departure of many and many a race, was the only mark the contestants had to observe, and except for the prohibition of taking the course through Long Island Sound, there were no other regulations as to course for the entire run.

Seldom, if ever, has a race of this character seen such careful solicitation on the part of the owners as to the selection of their navigators, engineers and crew. As a result, the aggregate completement comprised the very cream of professional and amateur motor boatmen. As for the boats themselves, they are, of course, as fine examples of the up-to-date sea-going power boat as can be found in any of this world's waters. M. Frank Dennis, owner of Caroline, had at her wheel, Ernest L. D. Cave, who cannot be said to be entirely unfamiliar with the course, since he has made the round trip from New York to Halifax exactly 361 times as navigator of one of the Red Cross Line steamers. Moreover, this well-known boat, which was designed by Whittelsey and Whitaker, and built by the Greenwich Yacht Yard, carried as engineer, Robt. C. Chapman, one of the chief engineers of the Holmes Engine Company, who have recently equipped Caroline with a 56 horse power six cylinder Holmes engine. Captain John Grub acted as skipper, and the rest of her liberal sized crew was composed of Mr. Dennis, Ernest Brown, A. J. Curran, Frank Perry, a Japanese cook, and, as mascot, the owner's eight-year-old son, George Francis Dennis. Caroline was the largest boat of the quartette, having an overall length of 66.15 feet and a beam of 14 feet. Her rating was 46.31 and her time allowance 16 hours 1 minute and 29 seconds. Her fuel capacity was nearly double that of Eronel, and three times that of the other entrants.

Credit, in full measure, goes to Peter Bentley, who, as chairman of the Regatta Committee, ably managed the big event.

The crew of Snap Shot III attracted particular attention from the fact that it contained the only woman to take part in the race. Mrs. Lindemann, the wife of the owner, went along, not only as mascot, but to make sure that the crew's efficiency should not fall down on account of insufficient attention to the demands of the man within. Mr. Lindemann was his own engineer. Snap Shot III was captained by Alfred Street, while Dick Crow and Andrew Muskat completed her crew. She is a new boat, designed by James Butler, and built this year by her owner. Her length, overall, is 40.04 feet and her beam, 10 feet. She is powered with a six cylinder 5 x 6 Van Blerck motor, of thirty-nine horse power. She rated at 45.76 and received a time allowance of 16:34:18.

On board Samuel Cochrane's famous cruiser Eronel, the owner, who is vice-commodore of the Bensonhurst Yacht Club, acted as navigator, while James Craig, maker of the four cylinder thirty-seven horse power Craig motor that pushed Eronel to Bermuda and victory a year ago, personally attended to the engine. Lawrence Zangere, assistant engineer, Joseph Smith, a professional, and H. J. Bartholomae completed her make-up. Eronel's specifications are well known: length, over all, 45.11; beam, 8.69. She was built last year by Lawley & Sons, of Boston, from A. Carey Smith designs. 46.00 was her rating; 16:21:18, her time allowance.

Tramp, the scratch boat, is a new forty footer, owned by Holland S. Duell, of the New York Yacht Club. Her exceptionally small midship section, measuring but 5.49 square feet as compared with Caroline's 25.37 square feet, was chiefly responsible for her having to give all her rivals an allowance of over sixteen hours. The beam measurement of Tramp is 7.39. Bowes and Mower, of Philadelphia, designed her and George Robertson, of City Island, built her. Her six cylinder Van Blerck motor is credited with forty-seven horse power. Her rating was 68.32. For crew she carried G. W. Robinson, captain; George S. Goldie, whose articles have appeared from time to time in Motor Boating, navigator; J. E. Sherman and Charles Lund.

MOTOR BOATING

THE NATIONAL MAGAZINE OF MOTOR BOATING

The Racing at Dubuque.

An Account of the Fourth Annual Regatta of the Mississippi Valley Power Boat Association. The First of the Season's Two Big Events on the Mississippi River.

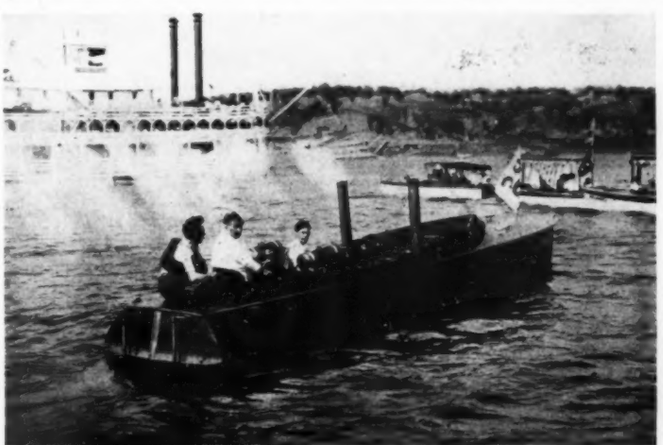
By Charles P. Hanley.

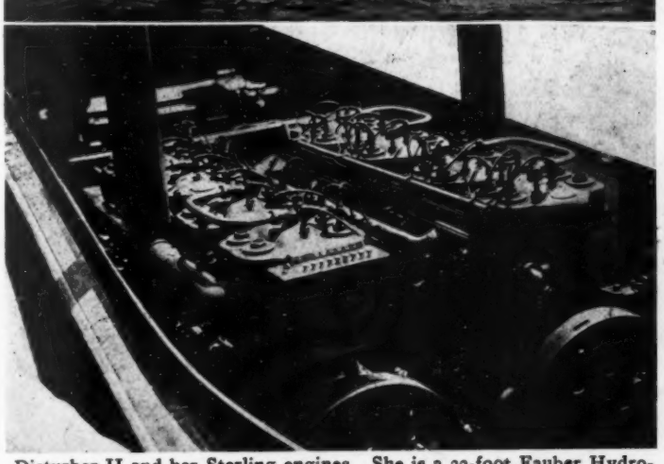
THE Annual regatta of the Mississippi Valley Power Boat Association as held this year at Dubuque, Iowa, on the 4th, 5th and 6th of July brought together the largest gathering of motor boats ever assembled at one time in the Middle West, and perhaps without doubt ever brought together at one time in this or any other country for the purpose of seeing a regatta and participating in the same. On Sunday, the 2d, they started to arrive at Dubuque from all quarters, and from then on there was a continuous stream of boats of all sizes, power and description, until at noon on the 4th over one thousand motor boats were anchored in the Dubuque harbor, and these boats with their crews, together with those that came via rail, brought together the immense crowd of over fifty thousand spectators to see and take part in the regatta.

The start of the regatta began at Belview, Iowa, the home of the owners of Red Top III and Comet, on Sunday evening, the 2d, when a reception given by the Belview Launch Club to the visiting fleet took place. At this time there was anchored at Belview some 300 boats, composing the Southern Fleet that had got to Belview up to that time. Belview entertained the visitors royally and made a big impression on all.

On Monday morning the Southern Fleet left Belview command of Commodore W. F. Bishop, of Muscatine, Iowa, the then president of the association, and reached Dubuque at noon. The reception they received upon their arrival at Dubuque from the thousands that were on hand to welcome them was tremendous, and one never to be forgotten by those that were fortunate enough to be present.

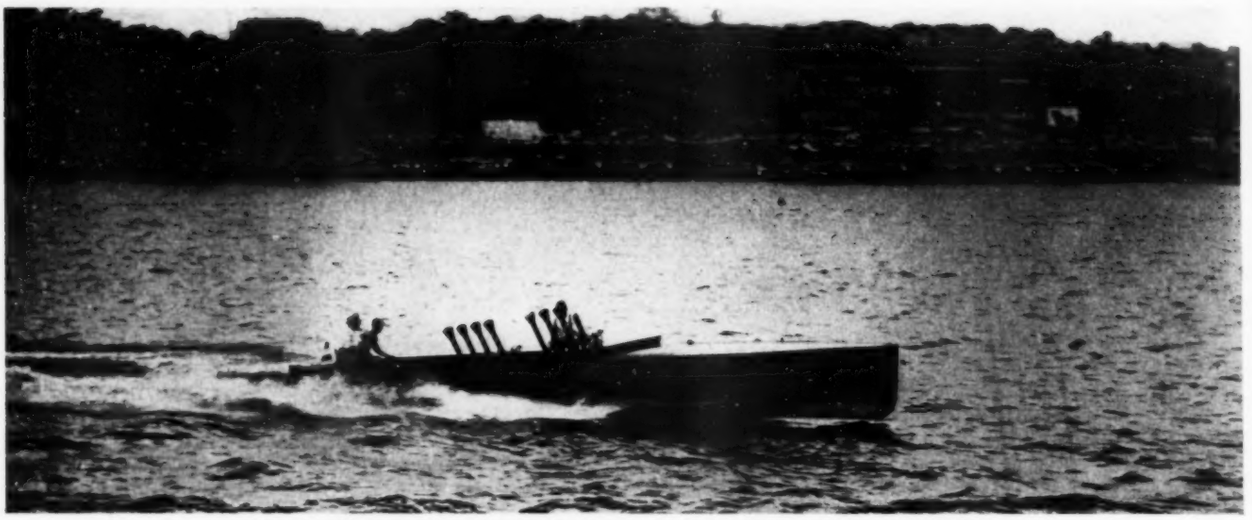
The races started on the morning of the 4th with Class K, a race of minor importance, which was followed in the afternoon by the running of Class F, for the 20-footers. This class always brings out a good field, and is one of the important events of the regatta, and this year's race of these little fellows was no disappointment. Five boats started, of which four finished, Pronto III finally winning, and by doing so broke the Association's record for this event, which was formerly held by Comet.



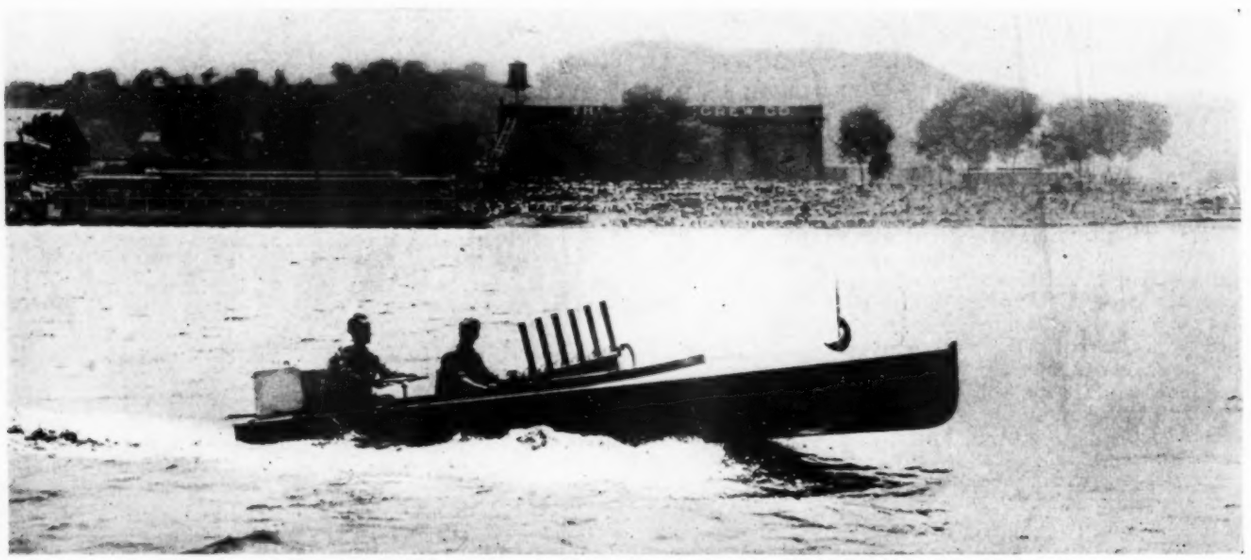


Disturber II and her Sterling engines. She is a 32-foot Fauber Hydroplane, owned by Commodore Pugh, who is shown at the wheel.

The next important event was the running of the Class D for the 26-footers over a distance of 20 miles. The race was won by Missouri 3, she making a showing at times of a speed of over thirty miles an hour. On the morning of the 5th a race for full cabin cruisers was held, being won by Alma, a handsome cruiser from Clinton, Iowa. In the afternoon the big events of the regatta were on the card, consisting of Class D for the 26-footers and the Grand Free-for-All for the Championship of the Association. The Class D was won by Pronto III, after Missouri 3 had led the race for two laps and was forced out of the race by reason of a broken rudder. The big event, the Championship race, brought out six starters, they being Disturber II, Hoosier Boy, Red Top III, Missouri 3, Scamp II and Comet. The distance for this classic event was twenty miles or four times around the five-mile course. Red Top III was practically out of the race before the start, by reason of a broken cylinder, caused the day before while in a trial run, and only the sportsmanship of her owner,

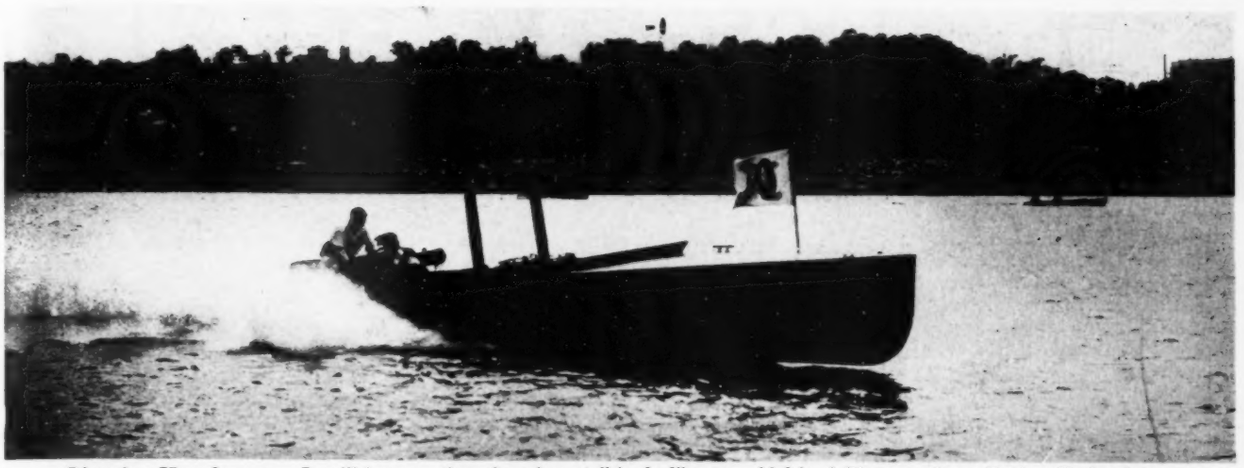


Red Top III, owned by W. E. Hughey, was unfortunate in cracking a cylinder.



Leading Lady, a fast 20-footer. Note the V sections forward that terminate in a flat plane aft.

Missouri III won the 32-foot championship—she does better than 30 miles an hour.



Disturber II under way. It will be seen that she trims strikingly like our old friend Pioneer, also a Fauber Hydroplane.

W. E. Hughey, caused her to start at all. At the first turn Missouri III was again forced to drop out by reason of rudder trouble, leaving the race to a fight between Disturber II and Hoosier Boy, the former finally winning after an exciting contest, and in doing so was forced to establish a new mark for this event in the association of 28 minutes 25 2/5 seconds. Hoosier Boy was second; Scamp II, third, and Comet, fourth.

The closing racing events of the regatta were held on the afternoon of the 6th, and consisted of mile speed trials for time. In this event Disturber made a mile at the rate of 38.54 miles per hour, which is the fastest time ever made by a motor boat in the Central West, if not in the country. Afterwards the Leading Lady, a twenty-foot boat, made a mile in two minutes flat and five miles in 19 3/5 seconds, or at a rate of 30 m.p.h.

The regatta was brought to close on Thursday evening by a Dutch lunch, served the visiting boatmen by the Dubuque Club; at this event the various prizes were awarded the winners of the various races.

Results of the Three Days of Racing at Dubuque.

CLASS K—5 MILES.

Boat.	No.	Start.	Finish.
V. V.	61	11:30	20:06

Only starter—won.

CLASS F—20-FOOT. 15 MILES.

Boat.	No.	Start.	Finish.
Pronto III.	3	2:16	32:39
Leading Lady.	60	.....	33:03¾
Comet	5	.....	35:41
Scamp III.	6	.....	36:17½
F. E. S.	4		Failed to finish
P. D. Q.	22		Failed to finish
Toy	52		Failed to finish

CLASS G—20 MILES. 32-FOOT CLASS.

Boat.	No.	Start.	Finish.
Missouri	20	5:30	41:35⅗
Pronto III.	3	.....	45:30
Scamp III.	6	.....	49:03
W. D.	11	.....	49:24
Vim Dubuque.	32		Failed to finish

CLASS A—CRUISER RACE WITH FULL EQUIPMENT ON BOARD (OPEN). 10 MILES.

Boat.	No.	Start.	First Round.	Finish
Alamo	24	11:24:15	28:56	57:43
Alma May.	100	.....	29:05	57:55
Elator IV.	50	.....	30:05	59:57
Gladys	95	.....	32:17	1:04:54
Kanowa	104	.....	32:31	1:10:56

CLASS D—25-FOOT CLASS. 4 ROUNDS, 20 MILES.

Boat.	No.	Start.	Finish.
Pronto III.	3	2:14	44:30⅖
Scamp III.	6	.....	49:20⅖
Comet	5	.....	49:30
Teaser II.	10		Out
Venus	14		Out
Missouri.	20		Did not finish
P. D. Q. II.	22		Out
Mallard	23		Out
Toy	52		Out
Leading Lady.	60		Did not finish

40-FOOT CHAMPIONSHIP CLASS. 20 MILES.

Boat.	No.	Start.	Finish.
Disturber II.	30	4:17	28:25⅗
Hoosier Boy.	13	.....	30:20
Scamp II.	6	.....	36:15
Comet	5	.....	37:05
Red Top III.	41		Out on first lap
Pronto III.	3		No start
F. E. S.	4		No start
Teaser II.	10		No start
W. D.	11		No start
Missouri.	20		Ort at N. turn
Toy	52		No start
Beryl M.	51		No start

MILE DASH AGAINST TIME. OPEN TO 40-FOOT CHAMPION CLASS.

Boats.	Down.	Up.	Down.	Up.
Disturber II.	38.13	37.5	38.54	36.36
Missouri III.	30.	26.78	.....	.....

The above figures are miles per hour.

Boat.	No.	Start.	1st Rnd.	2nd Rnd.
Chippewa Chief.	94	3:15	15:50	31:50¼
V. V.	61	....	18:28½	36:45¾
P. D. Q. II.	22	....	18:	40:55
Borum Jeric.	44	....	.....	.....

CLASS I—OPEN BOATS. 5 MILES.

Boat.	No.	Start.	Finish.
Borum Jeric.	44	3:13	18:25
V. V.	61	.....	18:35⅘
It	25	.....	18:50⅘
Little Nemo.	33	.....	21:05⅘

HANDICAP CLASS M—OPEN TO F, G, D OR 40-FOOT CHAMPIONSHIP CLASS. START AT 2:09:42

Boat	Start.	Finish.
Missouri*	8:52⅘	48:25
Scamp III.	2:16	48:40
Comet†	3:38⅖	49:25⅗

*Started 31 seconds ahead of time.
†Started 3 seconds to quick.

CLASS N.

Boat	Starting.	Finish.
Gladys	0:14	
Kanowa	First	
Elator IV.	2:39	
Alma May.	3:41	
Alamo	3:44	
Little Nemo.	12:26	
It	13:40	
V. V.	14:03	First
Borum Jeric.	14:06	Second
P. D. Q. II.	14:31	
Chippewa Chief.	16:41	

Comet, the former holder of the 20-foot record, and Pronto III, who broke the record this year.

Classic's Classic Marblehead.

How Rating Beat Out Speed in the Annual Run Around Cape Cod. The Race as Seen from the Time Prize Winner.

By One of the Crew.

FROM the float of the Motor Boat Club of America in Huntington Bay, Long Island Sound, to the finish line of the Marblehead Race off the Corinthian Yacht Club at Marblehead, Mass., is 245 nautical miles, or approximately 40 miles less than the course taken last year around Long Island and finishing off the Crescent Club at Bay Ridge. The seventh annual running of this race upon July 14, 1911, brought forth no astonishing results, and we of Kitsix were one of but four starters and three finishers.

The start from Huntington relieved us of some of the rough water outside of Long Island, and we had a most uneventful trip until reaching the buoy on Peaked Hill Bars off the Cape. Here a very busy "sou' easter" caught us, and it was a case of traveling in just about the direction the wind and wave took us for a time. We couldn't head for the port which marked the finish of the race, and we were obliged to point for Cape Ann at about every fourth swell, and finally made Marblehead by a series of tacks.

The blow didn't hurt us, but it held us back. A 32-foot boat doesn't appear very big when the waves are piling up higher all the time, and before we had covered the 45 miles across Boston Bay, Kitsix had her full share of the gale. We lost a 100-pound can of cylinder oil which had been lashed in the cockpit, but upon taking account of stock and crew we could find nothing else missing, and fortunately we had a liberal supply of oil besides the reserve.

The water, until the blow struck us, was like the proverbial mill pond, and we had been making good time after we learned that our magneto had been set one notch too far back, until we were obliged to buck the big waves. It took us over five hours to cover the 45 miles across the Bay, and this brought our average speed down so that the actual time for the first boat in was but little better than last year, notwithstanding the shorter course.

We experienced a thrill of excitement off Gay Head when we sighted six whales in close proximity, and at almost the very spot where Kitsix's ill-fated predecessor Kitcinque, caught fire two years ago. Whether or not we all considered the whales an evil omen, or whether the memory of the other voyage was fresh in our minds, I know not, but I do know that as one man, the minute we sighted those whales we jumped for fire extinguishers, and we held them ready until we were safely past the spot.

The Marblehead Race.

Start.—Off Motor Boat Club of America, Huntington Bay, Long Island Sound.

Finish.—Off Corinthian Yacht Club, Marblehead, Mass.

Distance.—245 nautical miles.

Winner.—Classic, owned by James Craig and racing under the colors of the Motor Boat Club of America.

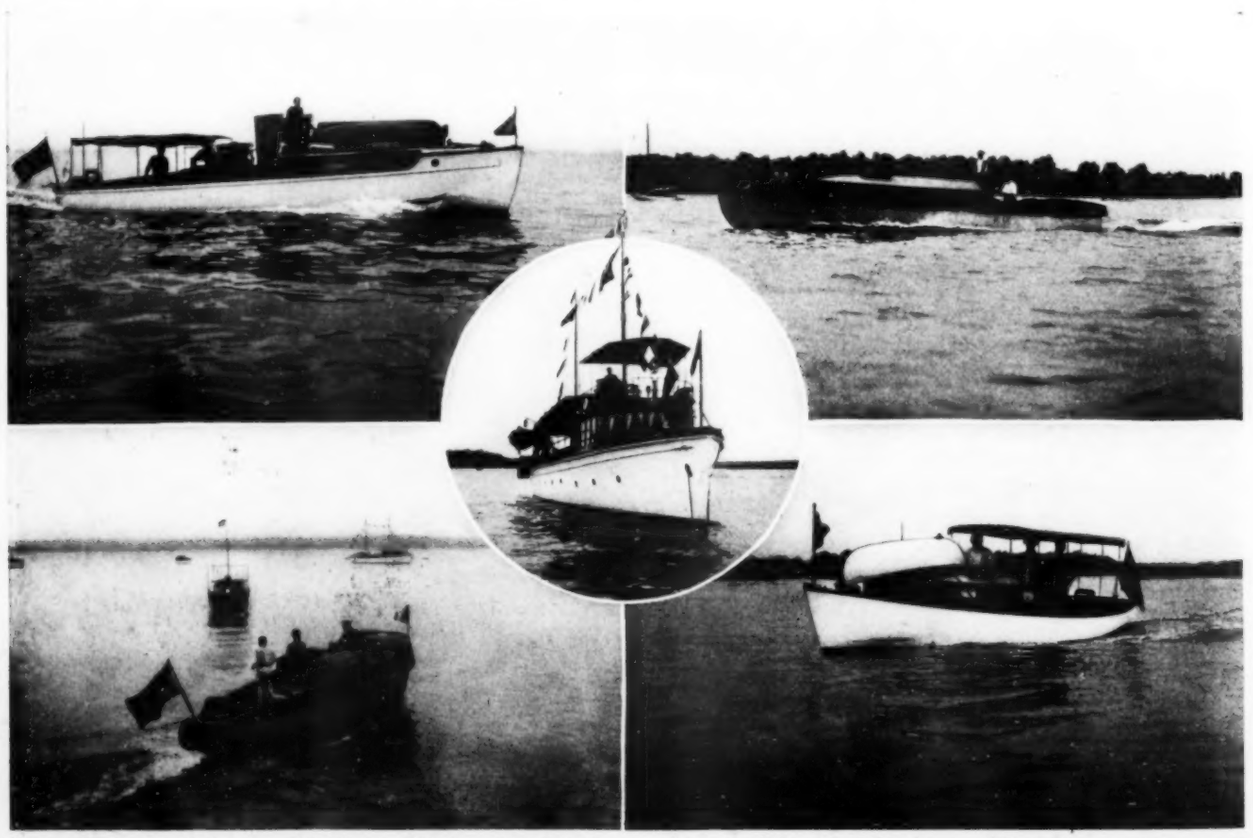
Second.—Kitsix, owned by F. D. Gheen and racing under the colors of the Motor Boat Club of America.

Best Actual Time.—Kitsix, 27 hours, 23 minutes and 5 seconds.

Best Previous Time.—27 hours, 35 minutes, 45 seconds, made last year by Blue Peter V over a 285-mile course.

Previous Winners.—

1905—Talisman.	1908—Irene II.
1906—Sis.	1909—Elmo II.
1907—Picaroon.	1910—Elmo II.



The contestants and the committee boat. Thistle and Inevitable are shown at left and right above, while below are Kitsix and Classic, the time winner and the winner on corrected time. In the center is Paula, the committee boat at Huntington.

Inevitable, Kitsix and Thistle at the float before the start.

To go back to the start of the race, the entrants were Classic, James Craig, owner, Motor Boat Club of America; length, 30 ft.; motor, 8-h.p. Craig.

Kitsix, F. D. Gheen, owner, Motor Boat Club of America; length, 32 ft.; motor, 31-h.p. Watertown.

Thistle, J. H. Wallace, owner, Yonkers Yacht Club; length, 40 ft.; motor, 28-h.p. Jager.

Inevitable, Alexander Johnson, owner, Yonkers Yacht Club; length, 39 ft. 8½in.; motor, 46-h.p. Eddystone-Globe.

The boats were measured and time allowances given by Morris M. Whitaker, and the starting gun was fired at 4.30 P. M. It was originally intended to start the race at 4 o'clock, but Classic had not yet appeared, and the start was postponed until her arrival. We improved our time while waiting by running out in the Bay for a test of our compass, and when the preliminary gun was fired it caught us unawares, so we were two minutes late at the starting line, allowing the three other contestants to get away ahead.

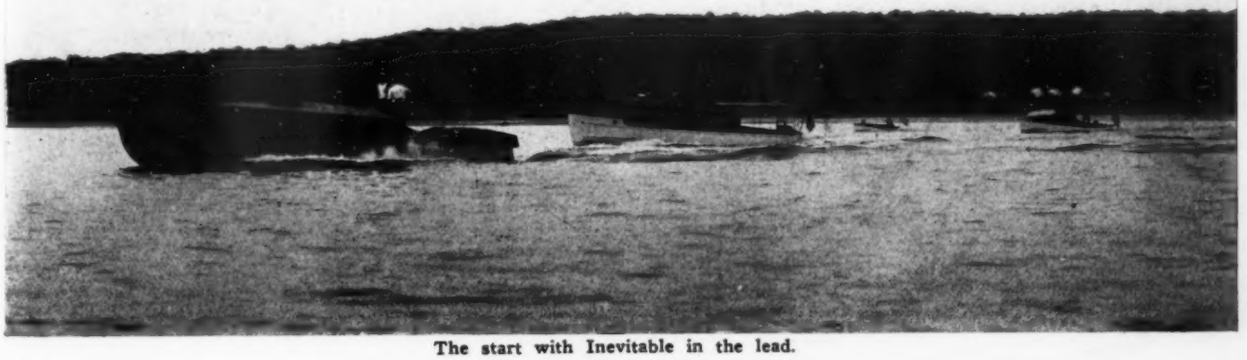
All except Inevitable finished, the scratch boat breaking down at Falkner's Island, off Guilford, Conn., and later being towed in to New Rochelle after floating about the Sound all night. Thistle, under the name of Josephine, is the craft that competed in the race of two years ago.

The Log of Kitsix.

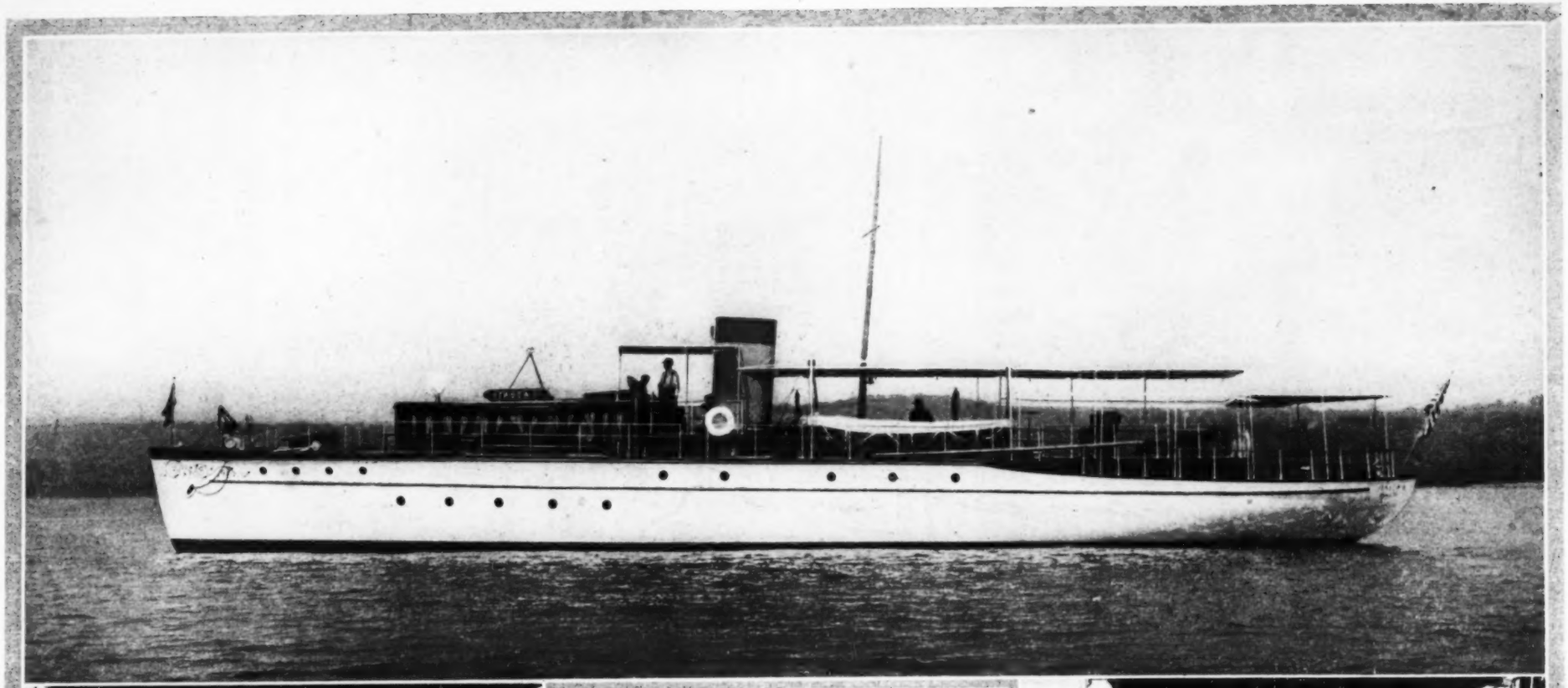
Crossed line at Huntington	4.32 p. m.
Friday, July 14th.	
Passed Eaton's Point (South)	4.55 p. m.
" "The Thistle"	5.12 p. m.
" Old Field Point	6.10 p. m.
" "The Inevitable"	7.55 p. m.
" Horton's Point	9.40 p. m.
" Plum Island	11.05 p. m.
" Little Gull	11.50 p. m.
" Point Judith Buoy	3. a. m.
" Vineyard Sound, L. I.	5.20 a. m.
" West Chop	7.30 a. m.
" East Chop	7.43 a. m.
Arrived Cottage City	7.45 a. m.
Left " "	8.45 a. m.
Passed Cross Rip	9.30 a. m.
" Shovelfull	10.58 a. m.
" Marconi Towers	1.20 p. m.
" Cape Cod Light	2.14 p. m.
" Peaked Hill Buoy	2.44 p. m.
Crossed line at Corinthian Yacht Club, Marblehead	7.53.05

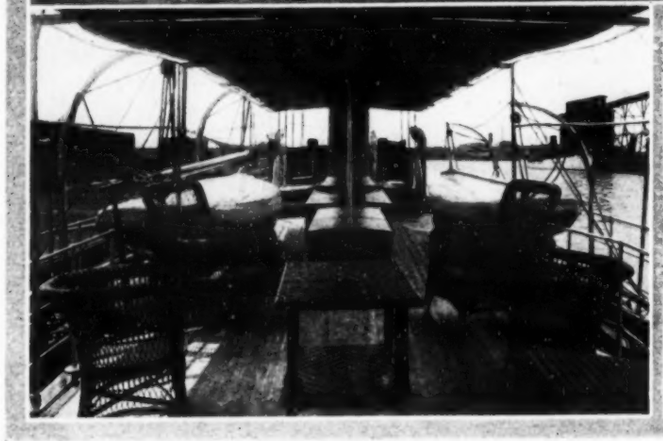
The Record of the Marblehead of 1911.

Boat and owner	Finish	Elapsed time	Allowance	Corrected time	Position
Classic (James Craig)	2:01:00	33:31:00	11:48:00	21:43:00	1
Kitsix (F. D. Gheen)	7:53:05	27:23:05	1:21:55	26:01:10	2
Thistle (J. H. Wallace)	9:29:35	25:59:35	1:59:12	27:00:23	3
Inevitable (Alex. Johnson)	Did not finish.				



The start with Inevitable in the lead.





Itasca II—An Ideal Cruiser.

Length over all..... 98 feet
Beam ..... 16 feet
Draft ..... 4 feet
Power Plant—Two 100-H.P. Standard motors, developing 140 H.P. at 380 r.p.m.; total, 280 H.P.
Speed .....15 miles an hour
Designed by Whittelsey & Whittelsey, New York City.
Built by Hudson Yacht & Boat Co., Nyack, N. Y.
Owned by E. B. Hawkins, Duluth, Minn.

Itasca II, An Ideal Cruiser.

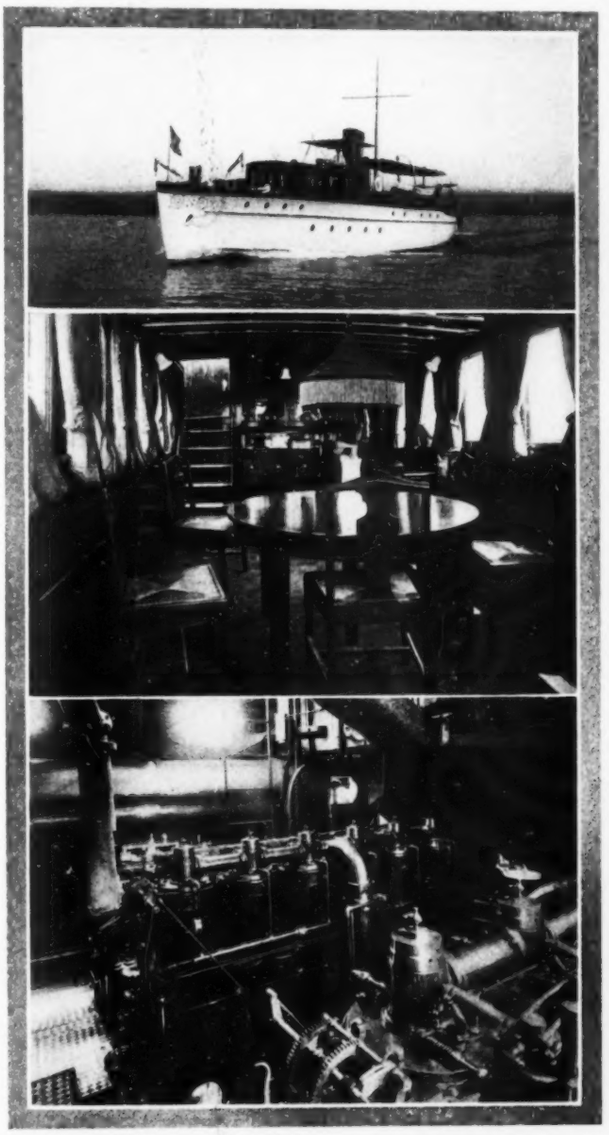
ONE of the most comfortable and completely equipped vessels of less than 100 feet over-all length is the ninety-eight-footer, Itasca II, the new cruiser illustrated on this and the opposite page, which has just been delivered to her owner, Mr. E. B. Hawkins, of Duluth, Minn. The boat was built by the Hudson Yacht & Boat Co., at Nyack, from the designs of Messrs. Whittelsey & Whittelsey, of New York City; the aim of the designers being to produce a boat for use on the Atlantic Coast, on the Great Lakes or among the Thousand Islands in the summer, and in Florida during the winter months. It will be seen, therefore, that in order to pass through the locks it was necessary to keep the over-all length below 100 feet; in order to navigate the inland waters of Florida the draft could not be excessive, and to avoid danger from grounding in these waters, the construction had to be exceptionally heavy, and, last of all, for safety in cruising along the coast, seaworthiness could not be lost sight of.

With all these considerations in mind, Messrs. Whittelsey produced a design that meets them perfectly. The beam is 16 feet 6 inches, and the draft 4 feet, just about the lower limit for a boat of this size if seaworthiness is to be a consideration.

Considering for a moment her construction: the keel is of heavy white oak, as are the frames and beams; the planking is of heavy yellow pine, copper riveted; the decks are of white pine, and the plank sheer, deck house and hatches are of mahogany.

A glance at the profile shows a trim, harmonious whole with low top hamper and a decided appearance of speed. The raised sides extend to a point somewhat abaft of amidships, from which point the sheer line sweeps down gracefully to a level with the flush deck aft, the raised deck continuing as the roof of the cabin trunk. The low appearance of the deck house is obtained by sinking the floor somewhat below the level of the raised deck, but not enough but that the occupants may see out of the windows when seated. This large room is tastefully finished in mahogany, and is provided with a duplicate steering equipment and engine room signals for use in bad weather. It is in direct communication with a large full-width galley beneath it by means of a companionway. The galley is ventilated by natural and forced draft and is equipped with an icebox of 1,500 pounds' capacity. Forward of the galley are the captain's and engineer's staterooms on either side of the passage, and a roomy forecastle forward.

According to the engineer, the engine room is a "dandy," and the head room, except at the forward end, is 8 feet 6 inches. It is ventilated by ports, skylights, and the syphoning effect of the exhausts in the stack. The power plant consists of two 100 h.p. air-reversing Standards, developing 140 h.p. at 380 r.p.m., making available a total of 280 h.p., which drives the boat at better than 15 miles per hour. An auxiliary engine drives the dynamo for the lighting system and the pumps. Each of the eight watertight compartments of the bilge may be drained separately by means of a manifold in the engine room, either by the power pumps or the two hand pumps on deck. The electric lighting system provides for both direct and storage battery methods. The plant was installed by Smith & Meeker.



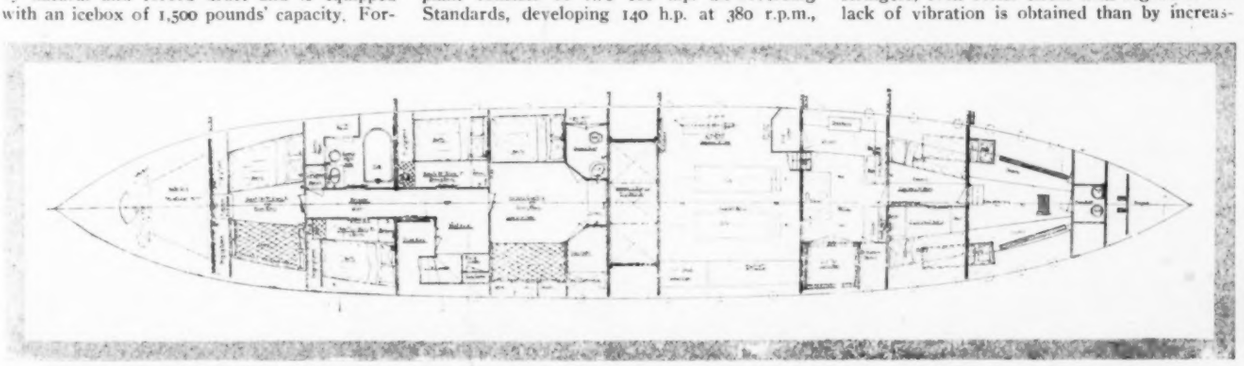
The interior of Itasca II's deck house and her brace of Standards.

Separating the engine room and the living quarters aft is a watertight compartment in which are installed the fuel tanks, completely isolating the machinery and preventing any noise from it reaching the staterooms.

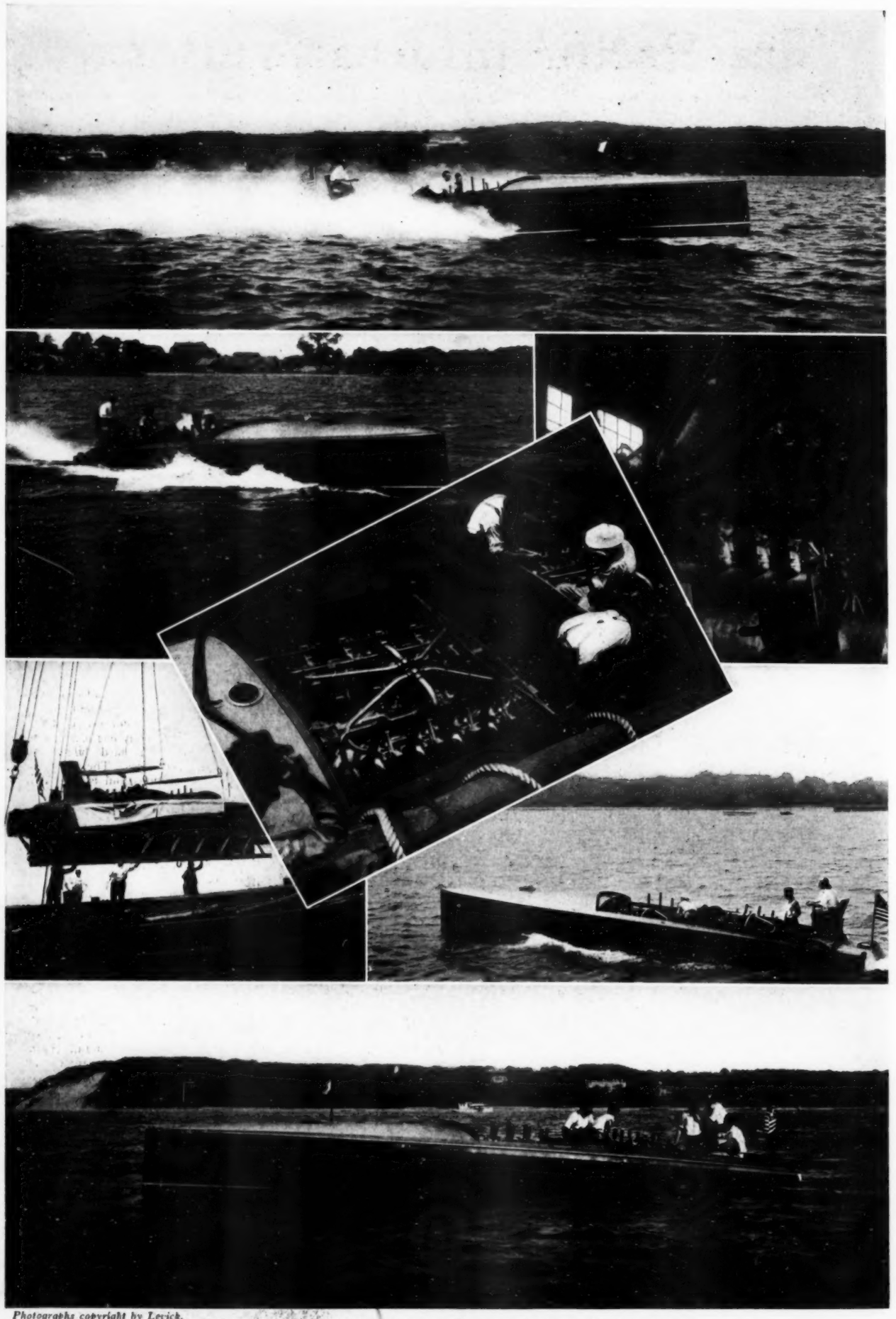
The living quarters are entered through a companionway to starboard of the cabin trunk, leading to a lobby below. These quarters consist of a full-width owner's stateroom forward of the lobby, with a private washroom and large wardrobe. Another full-width stateroom occupies the after part of the boat, and between these two are two guests' staterooms, a bathroom and a trunk room. Each of the staterooms is supplied with hot and cold running water. A watertight door is set flush into the wall of the passageway, so that in case of emergency the living quarters may be divided into two watertight compartments.

In regard to the form of Itasca's hull, the top sides forward show a decided flare and the sections at this point are U-shaped. The middle body has plumb sides, with medium hard bilges, and slight dead rises. The after body has V sections and is very clean as is shown by the lack of disturbance, even when running at full speed; in fact, there is no more stern wave than with many a 50-footer.

A very noticeable feature of the boat, through its absence, is vibration, the engines running as though embedded in concrete. This may be explained by the fact that in Itasca II, as in a number of the boats by the same designer, much care has been given to the longitudinal framing of the boat. The engine bearers are continuous stringers running the entire length of the boat, and besides these, there are heavy bilge stringers and clamps. By mounting the engines on these full-length stringers, even better effect with regard to the lack of vibration is obtained than by increas-



The accommodation plan of Itasca II. Note that practically half of the interior below decks is devoted to the living quarters.



Photographs copyright by Levick.

Dixie IV, One of the Principals in the Coming British International Cup Races.

The successor to the famous Dixie III was given her preliminary trials on July 15-16. She was designed by Clinton H. Crane for Messrs. Burnham, Melville, and Heckscher. Her power plant consists of two Crane 8-cylinder V type engines, one of which drove Dixie III. Her underbody is V shape forward, terminating in a flat plane aft with a step, probably about amidships. The motors drive by means of gears through the forward ends of their crankshafts. The top photograph shows Dixie IV at full speed; the one immediately below at the left, at half speed. The others give a good idea of the lines above water and the general arrangement.

The Pacific International Race.

How Corsair, a Replica of Ilys, Won the Second Victory in Her Two Months' Career. An Extract From Her Log, and Descriptions of the Other Contestants.

By Chester L. Wynn.

CORSAIR is no longer a "dark horse." She is now out in the open. Untried and unknown she entered the Doman cup race on Memorial Day, and on a quiet sea brought home the prize to her owner, Commodore B. F. Jacobs, of the Tacoma Yacht Club. Under entirely different conditions, heavy seas and rainy weather, she covered the 235-miles course of the Pacific International Long Distance Race a month later in the record time of 21 hours, 31 minutes and 30 seconds, and not only took first place, but carried away three cups in the winning. Few boats can boast that they took down first place in the two principal events of the year in their waters within two months after they were launched—Corsair has two victories and four cups already, and the yachtsmen of the Northwest Pacific are already figuring on designs which they hope will beat her next year.

Owing to a slight mixup in yachting affairs between the Canadian and American cities there were only five starters in this race this year, four of which were under the flag of the Royal Vancouver Yacht Club. The actual performance method of rating which had been tried out the year before with little success was not used this year, and the cruisers were classed with respect to the measurements. This year, however, as a result of complaints so general in all racing sections, the starters were given a leeway of some six hours in which they could put off. Every skipper was given his choice of starting any time between the hours of 8 A. M. and 2 P. M., and in this way any "kicks" about having to put off when the tides were unfavorable were done away with. All the handicaps were figured at the finish, and the new rule worked out in an admirable manner.

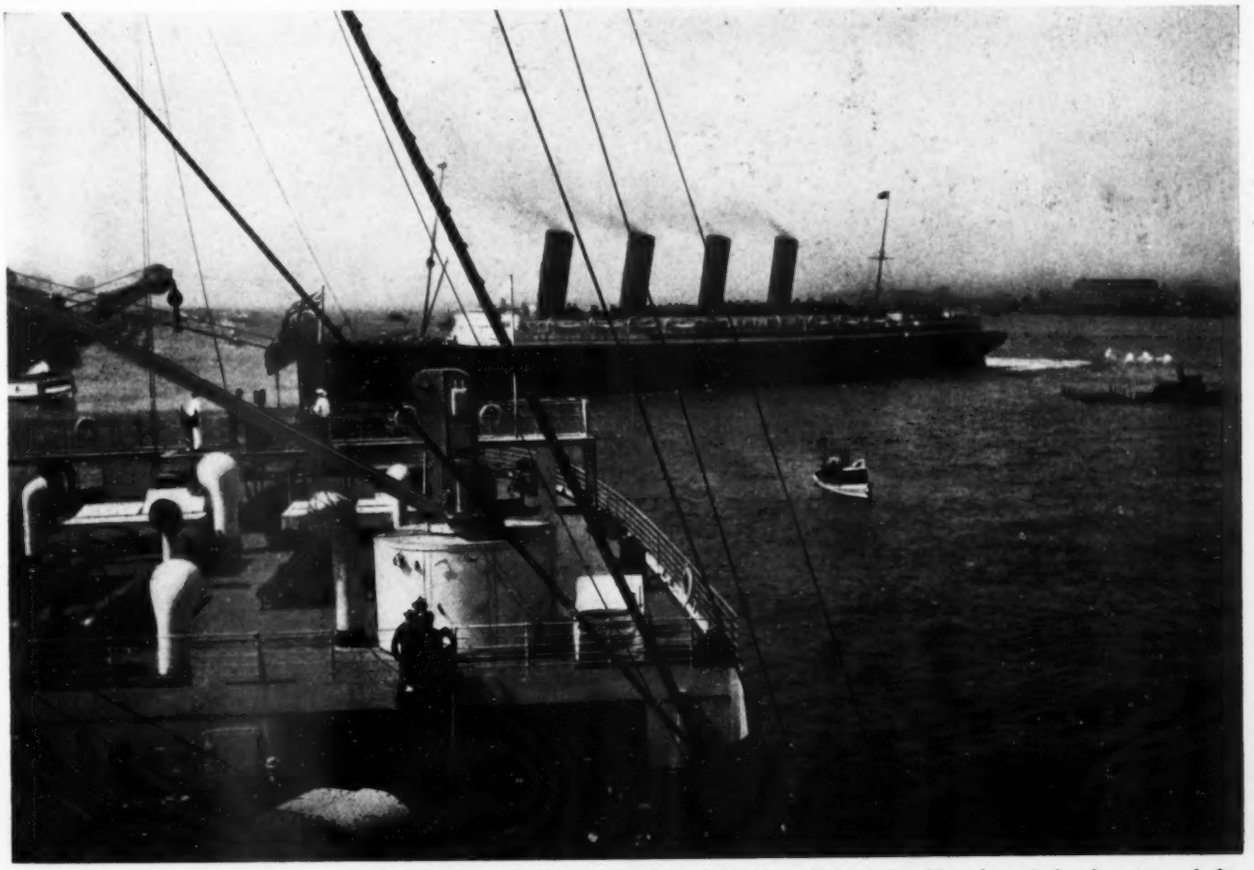
It so happened that the tides were running in such a manner that all the skippers figured that as early a start as possible would give them the advantage, and as a result Corsair, Davy Jones, Half Moon, Puddle Duck and Cheileena, the five entries, started close to 8 o'clock. The course as laid out was from Vancouver, to Bellingham, around a buoy in the Seattle harbor, to Port Townsend and thence to Victoria, the finish. How the race was run and won can best be shown by a glance at Corsair's log, which in condensed form is as follows:

"Crossed the line in English Bay, Vancouver, at 8 o'clock, and stood away for Point Grey; turned Point Grey at 8.40 and laid course for Sand head light; weather cloudy, but clearing; light southeast wind; head tide; rounded Sandhead at 9.57; growing sea and wind with head tide; by this time had pulled Half Moon about one mile and Puddle Duck was about half mile astern; passed Fraser River beacon, 10.05; Puddle Duck three minutes astern; Half Moon six minutes astern.

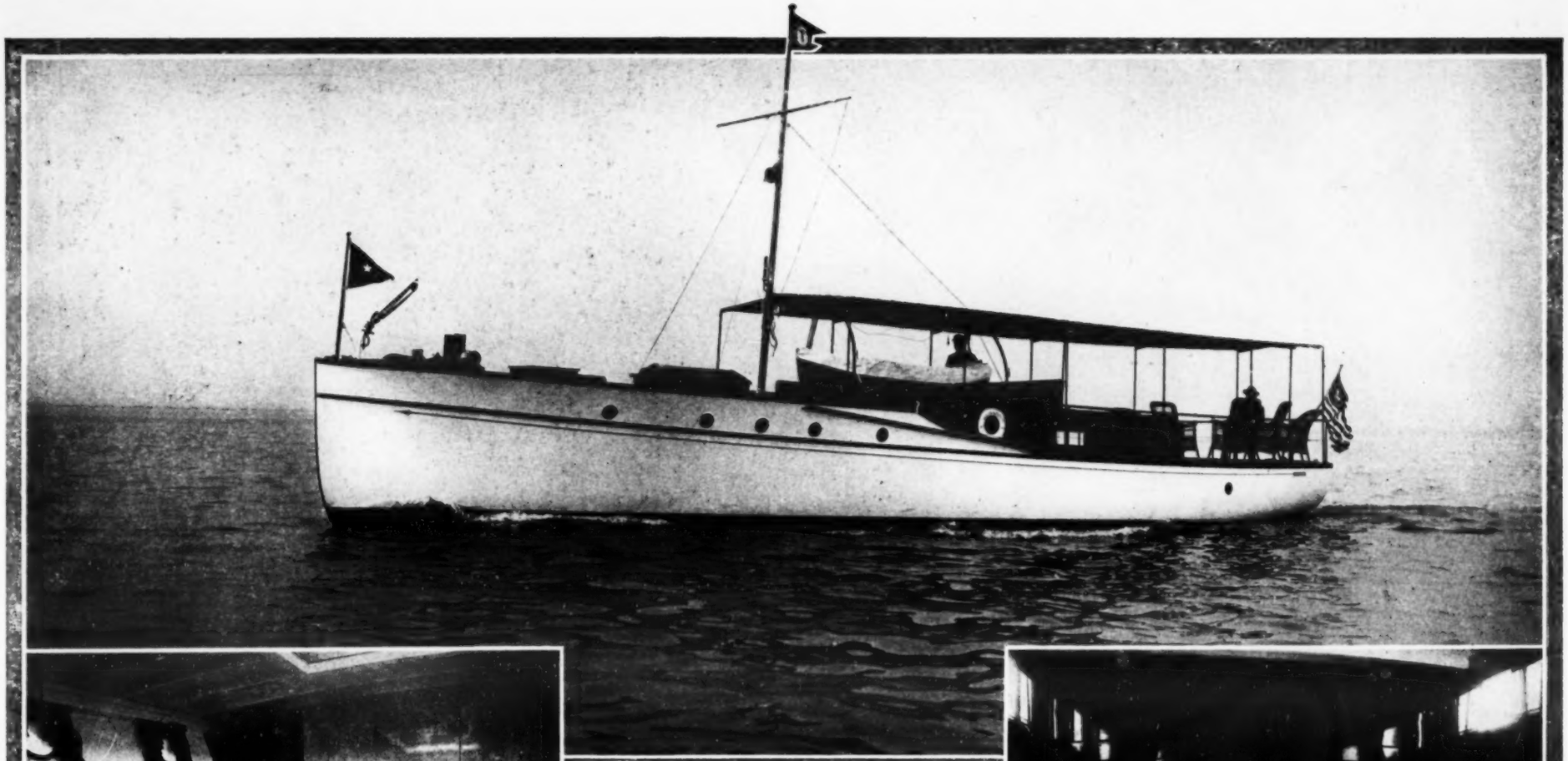
"Passed Sandhead buoy at 10.33, Puddle Duck about 4 minutes astern, Half Moon 7 minutes; passed Point Roberts, 11.20, appeared to be steadily dropping everything in sight; at 1.32 passed lighthouse on East point of Luma Island, Hales Passage, rounded spar buoy at entrance of Bellingham bay at 2.38, as near as possible judge Puddle Duck turned stake boat at Bellingham Bay 9 minutes later, Half Moon at 3 P. M. and Davy Jones at 3.06; laid across for South of Luma Island with fair tide and smooth sea, entered Bellingham channel with head tide and sea making with west wind; bucked strong tide to Partridge Point Buoy, where heavy tide rips made nasty sea; turned Partridge Point Buoy at 6.21 and laid course for Brush Point Light, weather dull and clouded with west wind.

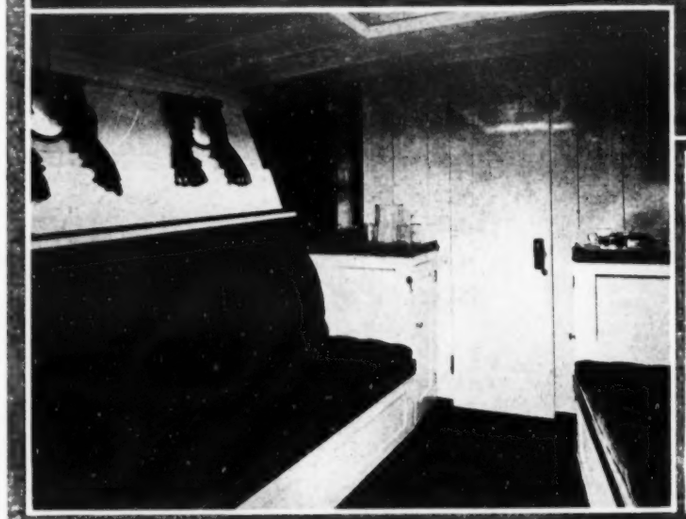
"Passed inside Point Wilson at 6.45, sea smoothing; passed Brush Point Light 7.30, making last 16 miles in one hour and 9 minutes; passed North Point Light at 8.12 P. M. and West

(*Continued on page* 13.)



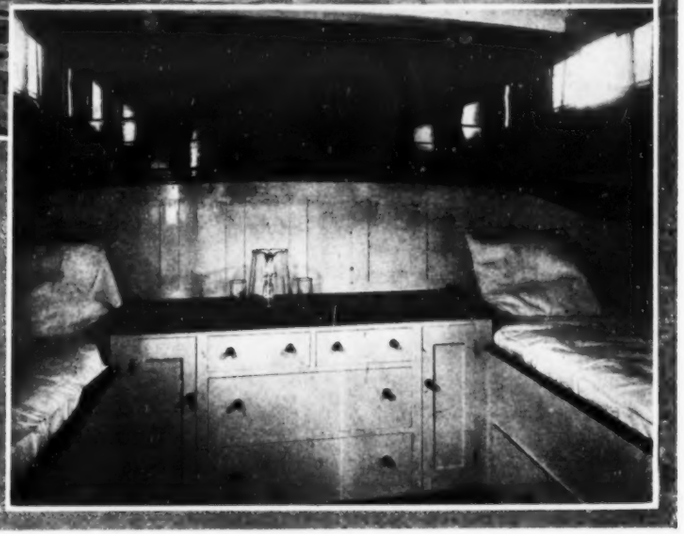
Bossing the big ones—the dock commissioner's gasoline launch superintending the arrival of the Olympic and the departure of the Lusitania.





Kuwana II, A 56-Footer.

Length over all.....56 feet
Extreme beam.....11 ft. 2 in.
Draft ..... 3 ft. 1 in.
Power plant—two 4-cylinder, 25-H.P. Craig engines.
Gasoline capacity, 200 gallons.
Designer and builder, The Electric Launch Co., Bayonne, N. J.
Owner, Mr. J. B. Trevor, of the N. Y. Yacht Club.



(*Continued from page 11.*)

Point light at, 9:50 p.m.; turned stake boat in Seattle Harbor where made report of name, number and captain, and laid course for West Point light on return stretch; met boat going in at 10:41, met another boat going in at 10:50; met another boat going in at 10:55, which saluted us with three whistles; at 11 p.m. met a larger boat going in; turned Point No Point light at 12:35 and passed Point Wilson light at 2:10 a.m."

It may be well to divert from the log at this point to note the fast time that Corsair made going in and out of Elliott Bay, the Seattle Harbor. The shortest possible distance from Point Wilson light to the stake boat off the Seattle Yacht Club is 42 miles. On the run in Corsair made it in 3 hours and 40 minutes, and on the way out in 3 hours and 45 minutes. Although Commodore Jacobs, who was navigating her was handicapped by a "black" night and a blinding downpour of rain, he only varied 5 minutes on the two laps and ran his craft better than 10 miles per hour the entire distance. From Point Wilson Commodore Jacobs laid his course to Victoria, and although meeting with heavy swells in the strait of Juan de Fuca, steered an approximately direct course to the finish line off the outer wharf at Victoria, which was crossed at 5:31 a.m.

Cheileena had hard luck at the start, engine trouble putting her out of commission before she had reached Point Grey. The other four cruisers went over the course in great shape, not one of them reporting any engine trouble. Corsair maintained an average speed of 10.3 miles per hour over the 235 miles, which is a record especially when the weather with which the racers had to contend is considered. The official time, ratings, etc., of the race are as follows:

First—Corsair, Capt. B. F. Jacobs, Tacoma Yacht Club; 24 h.p. Buffalo; rating, 40.5; actual time, 21 hours, 31 minutes, 30 seconds; handicap, 173.4 minutes; corrected time, 18 hours, 36 minutes and 6 seconds.

Second—Half Moon, Capt. Know Walken, Royal Vancouver Yacht Club; 18 h.p. Standard; rating, 39.9; actual time, 23 hours, 11 minutes, 30 seconds; handicap, 188.2 minutes; corrected time 20 hours, 3 minutes and 18 seconds.

Third—Puddle Duck, Capt. F. W. Robertson, Royal Vancouver Yacht Club; 35 h.p. Gardner; rating, 49.1; scratch boat actual and corrected time, 22 hours and 15 minutes.

Fourth—Davy Jones, Capt. E. H. Deane, Royal Vancouver Yacht Club; 50 h.p. Frisco standard; rating, 48.1; actual time, 22 hours, 37 minutes and 30 seconds; handicap, 15.3 minutes; corrected time, 22 hours, 22 minutes and 12 seconds.

Kuwana II, An Interesting Cruiser.

ONE of the most satisfactory of the 1911 motor yachts is the twin screw Elco motor yacht Kuwana II, designed and built by The Electric Launch Company, of Bayonne, New Jersey, for Mr. J. B. Trevor, of the New York Yacht Club, who is using the boat at Bar Harbor, Maine.

Her length over-all is 56 feet; beam, extreme, 11 feet 2 inches, and draft of hull, 3 feet 1 inch. The highest grade construction is employed in the building of the hull with oak keel and frames, selected long leaf southern cedar planking fastened to the frames with copper boat nails riveted over washers. The fastenings throughout are of copper and bronze to withstand the corrosive action of the salt water.

The general arrangement of the boat is novel and quite different from other boats of this size, the power equipment being placed aft, leaving the entire forward quarters for the use of the owner. These are finished in white enamel and mahogany trim, the outside of the cabin house, skylights, etc., being all of mahogany.

At the forward end of the quarters is a spacious galley with an unusually large icebox, cupboards and lockers, stove bench for denatured alcohol range and porcelain sink, the fresh water capacity being one hundred gallons, flowing by gravity to the galley sink, and other fixtures throughout the boat.

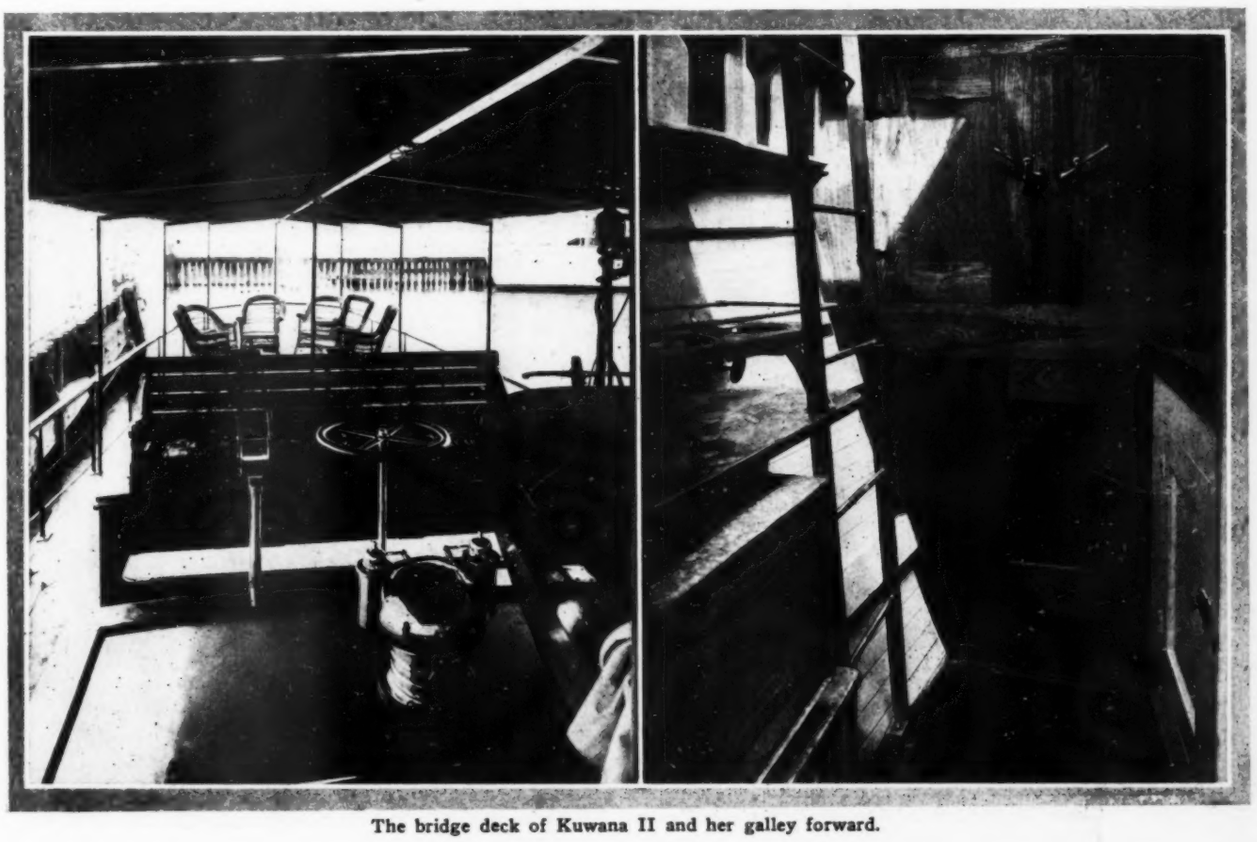
Directly aft of the galley is a social hall or saloon with transom seats, china closets and lockers, where two or four berths can be arranged as may be required. The passageway from the deck enters directly into this saloon with a winding mahogany stairway. Aft of the saloon is the owner's stateroom with two three-quarter berths, chiffonier and lockers. The lavatory is accessible direct from the owner's stateroom, or from the passageway, and is equipped with the usual yacht fixtures.

The quarters for the crew are in the engine room, two men being provided for. A third man could sleep in the lazarette if necessary to have him on board, but the owner's idea in building the boat was to use it principally for day service, with accommodations for living on board a night or two if desired.

The power equipment consists of two four-cylinder 25 h.p. Craig gasoline engines of his latest improved type. The engine installation, particularly the gasoline, was given a great deal of thought, the tank being cylindrical, of galvanized steel and of two hundred gallons capacity. It is fully exposed and can be examined from all sides, being located at the forward end of the engine room athwartships.

A complete Elco electric light system is installed with dynamo driven from flywheel of port engine, with switchboard and storage battery auxiliary supply.

Kuwana II affords an unusual amount of deck space aft as well as forward, being steered and controlled at the bridge which is about amidships; a spacious bridge settee is placed directly aft of the steering wheel. A 10-foot dinghy is carried on davits on the port side.



The bridge deck of Kuwana II and her galley forward.

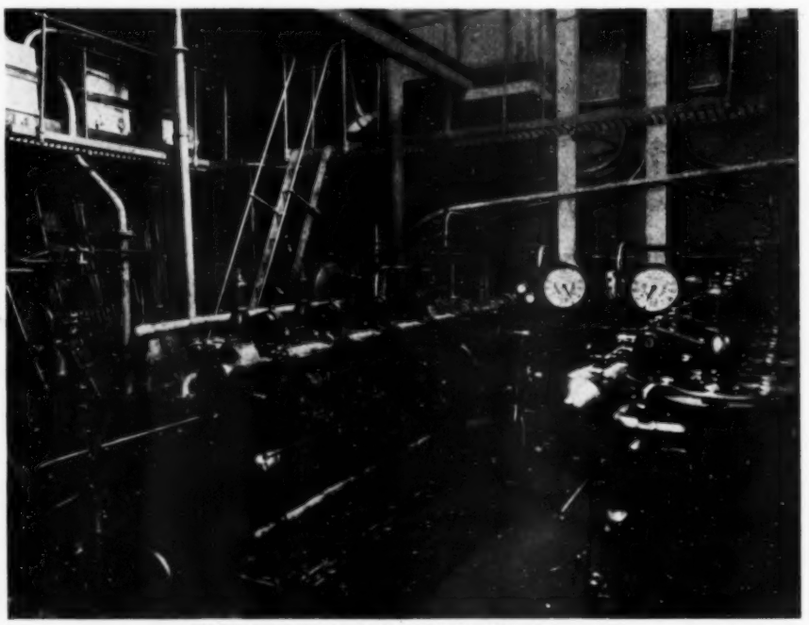
Motor Driven Ships.

Some of the Large Boats That Are Being Built Abroad and Equipped With Diesel Engines. Successful Vessels That Should Convince America of Their Practicability.

By J. Rendell Wilson.

ALTHOUGH a very great number of Diesel-engined ships are now building, many of which will be launched in the early autumn, the motor vessel Romagna, illustrated opposite, is the largest *passenger* carrying vessel at present in service. Not only is she the largest of her class, but she is one of the highest powered Diesel-engined craft, as her machinery is of 800 h.p., as against the 600 h.p. of "Quevilly," 500 h.p. of "Vulcanus," and 450 h.p. of "Toiler," three noteworthy cargo motor ships that have recently been placed on the water.

Romagna was built to the order of the Romagnola Steamship Company, by the Cantieri Riuniti, at their Ancona (Italy) shipyard, and is undoubtedly the handsomest vessel of her class yet constructed. She is engaged in mail and passenger service between Ravenna-Trieste and Fiume. Her length is 161 feet by 24 feet beam, with 10½ feet draught and has a displacement of 1,000 tons. Regarding her accommodation, under the turtle-deck forward is the forecastle. Next are two large holds, divided by a watertight bulkhead, and a third hold aft, separated by a spacious engine room. In all, the three cargo spaces have a capacity of 750 cubic meters, or about 800 cubic yards.



Toiler's pair of 160 h.p. Polar-Diesel motors.

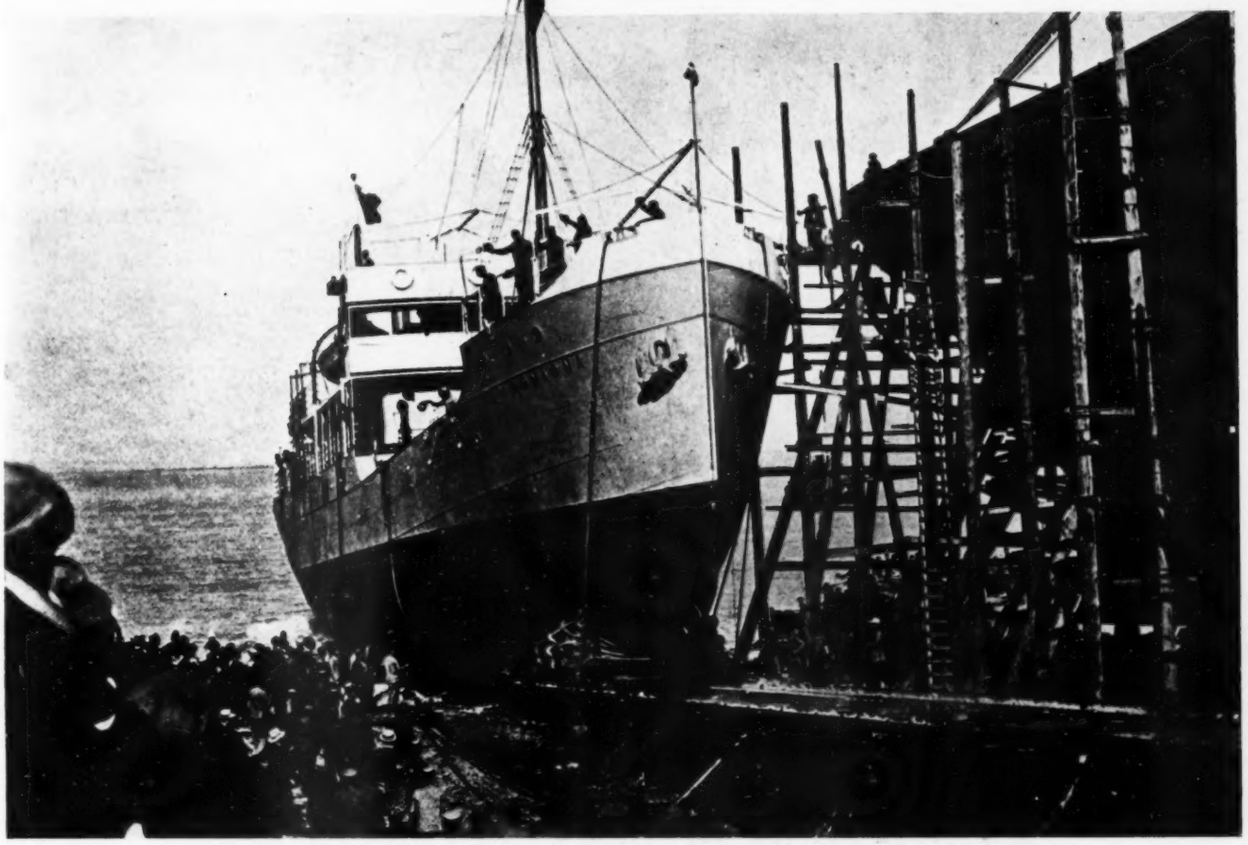
She is a twin-screw boat, and the propellers are driven by two four-cylinder 400 h.p. Sulzer-Diesel motors, running on crude oil fuel, which were constructed by Messrs. Sulzer Bros., of Winterthur, Switzerland, who are one of the pioneers of marine crude oil engines. They are of the two-cycle type, and are directly reversible, being coupled to propeller shafts without reverse gears, or electric transmission. There is, of course, no electrical ignition, the firing being entirely by the heat of compression. On looking at the illustration of the engine it would seem that there are five cylinders, but the large one at the forward end (left-hand side of photo) is the compressor.

The working principle of the two-cycle Diesel type of motor is of interest. At the end of the combustion stroke, a scavenging pump, worked off the engine, expels the burned gases leaving the cylinder full of pure air to be compressed. During the compression stroke there is no explosive mixture in the cylinders; but, at the end of the stroke, fuel is injected under enormous pressure, and burns gradually. Starting and reversing are accomplished by compressed air, ample reservoir tanks being provided for this purpose, which are kept charged by the compressor previously mentioned. Heavy oil with a specific gravity of 0.9 can be used, and the fuel consumption is about 0.5 lbs. per horsepower, which is very low compared with kerosene engines. This fuel is perfectly safe as the flash point is about 210 degrees Fahr., and, at the time of writing, the cost, in London, is about ten dollars per ton.

These facts will go to show how economical a boat Romagna will be. In view of the low fuel cost, absence of stokers and increased capacity on a given displacement, she is far ahead of a steamer of the same dimensions and should be a far greater medium of profit to her owners.

Few vessels will be of greater interest to Americans than "Toiler," destined as she is for the Great Lakes and Canadian Canals. Being driven by crude oil internal combustion engines she will mark a new era in ship propulsion in those waters, where she will be used for wheat carrying. She has already successfully carried out her maiden voyage, which was from Newcastle-on-Tyne to Calais and back. She is a twin-screw vessel, 248 feet in length by 42½ feet beam, with 19 feet moulded depth and 14 feet loaded draught. Her builders were Messrs. Swan Hunter & Wigham Richardson, Ltd., Newcastle-on-Tyne, England, and she was engined by the Aktiebolaget Diesels Motorer, of Stockholm, Sweden, who are the makers of the Polar-Diesel marine engine. She is fitted with two direct-reversible Polar-Diesel motors, of the two-cycle type, each having four cylinders, 9.85 inch bore by 14.6 inches stroke, and normally

The 248-foot, steel freighter, Toiler, built in England for service on the Great Lakes and Canadian Canals.



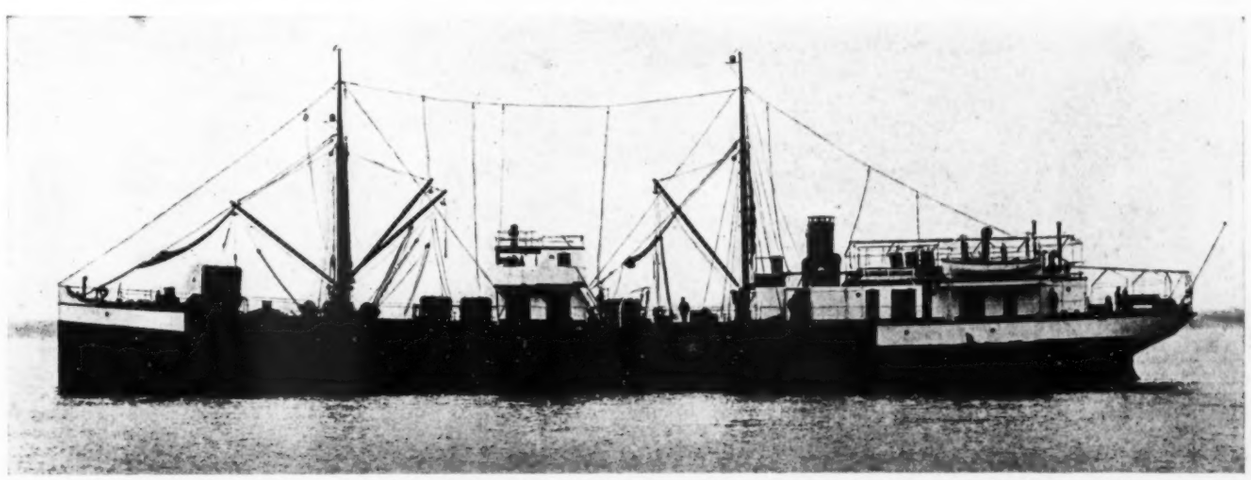
Romagna, the world's largest Diesel-engined passenger vessel, sliding down the ways.

180 b.h.p. is developed at 280 revolutions per minute. The two engines combined are equivalent to about 400 indicated horse-power. As speed is necessarily restricted on the Canadian canals it has been found that this small horse-power for a vessel her size is quite sufficient. The total weight of the machinery is about 16,000 Kg., that is to say, about 60 tons less than steam engines and boilers of a similar power; while the fuel consumption is only .200 Kg. per efficiency b.h.p.

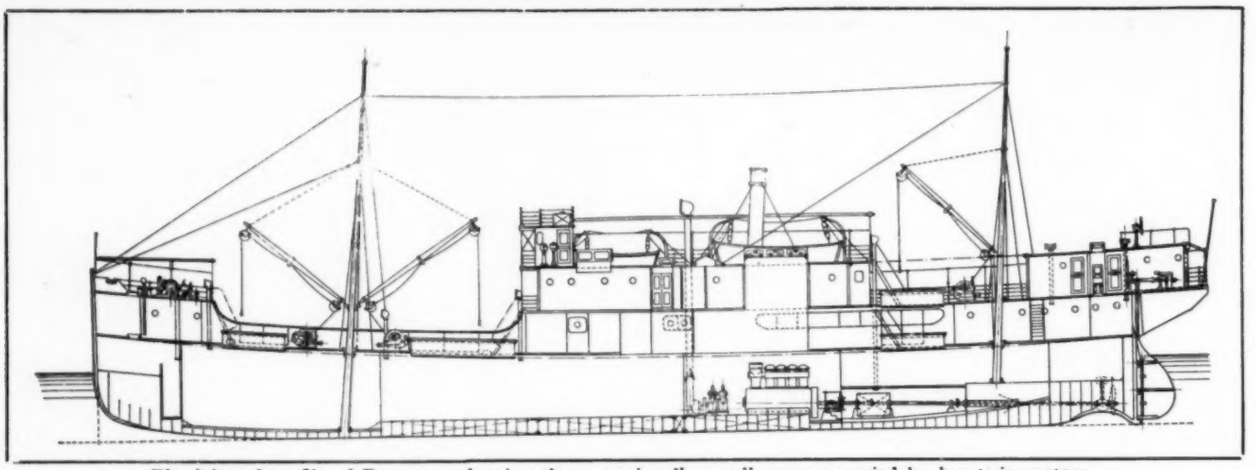
Unlike several of the big motor vessels recently built "Toiler" is funnelless, and she is entirely free from deck-work for the center three-parts of her length. The deck-house, bridge and part of her accommodation is forward, while the remainder of the crew space and the engine room is right aft. She carries two short pole masts, one forward, and one at aft, which take off the somewhat barge-like appearance she would otherwise have. However, looks are of little account as she is essentially a cargo vessel. The hold occupies the central section, and on her voyage to Calais she carried 2,650 tons of coal cargo and 40 tons of crude oil fuel. Leaving the Tyne in rough weather she averaged 5.9 knots (6¾ m.p.h.) throughout, her engines running in perfect unison. When running light on the return voyage she averaged 8.2 knots (9½ m. p.h.), a very excellent performance for her tonnage and horse-power, especially as her engines were newly installed. The consumption of fuel for both journeys, including that consumed by the auxiliary compressor, was 6½ tons. In other words the fuel consumption was 1.7 tons per 24-hour day with 18,000 b.t.u. calorific value oil.

Compared with steam machinery the saving is very great. With "Toiler" the fuel bill would be about $16 per day, which is placing the cost of fuel on the high side, whereas boilers would require at least nine tons of coal per diem at, say, $3 per ton (a very low figure)—$27. Thus $11 per working day can be saved on fuel alone and, in addition, these are no stand-by charges, as a crude-oil engine can be started up instantly without any heating up; starting, of course, being carried out by compressed air, which is stored in tanks. But this is not the only saving, as stokers are dispensed with, and, apart from their food, about $5 per day will be saved on the wages bill, and their accommodation given over to extra cargo space, which also represents hard cash. These various savings mean a considerable figure towards increasing the annual profits.

Another important economical item to be considered is that owing to the absence of boiler and bunker space, and fuel being carried in the double bottom in place of water ballast, a much greater space is given over to the hold, again greatly increasing her earning powers. Weight for weight with coal oil requires only one-fourth the amount of space, which increases her dead-weight capacity by about 120 tons—another increased earning power. All the deck machinery and the engine-room accessories are worked by com-



Vulcanus is another of the foreign built motor vessels that should cause the United States to "buck up a bit."



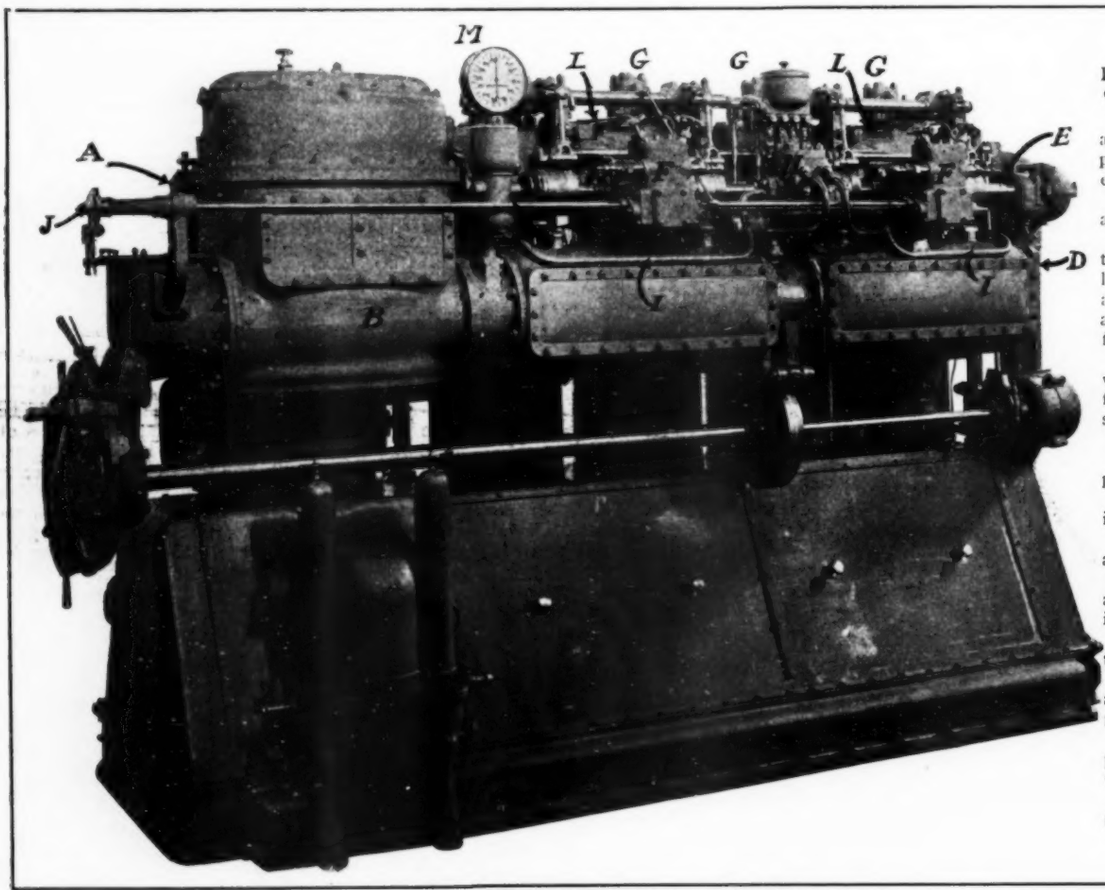
The inboard profile of Romagna, showing the exceptionally small space occupied by her twin motors.

pressed air, the compressor being driven by a small auxiliary Diesel engine; while electric light, which is installed throughout, is derived from a kerosene-electric set. Steam as a driving power has been entirely dispensed with, and even the cabins are heated by exhaust gases. As far as her trials were concerned she was a success in every way, and there is little doubt that in actual service she will be just as efficient.

Such motor vessels as the "Toiler" and the "Vulcanus," although big craft, seem almost insignificant when one considers the tonnage and horse-power of some of the large ships actually building to the order of shipping firms and for various governments, so great are the strides that have been made with marine oil engines of the Diesel type. But firms who have placed orders are very reticent, and in nearly all cases refuse to give details, as publicity is not desired until the vessels have proved successes, and so perhaps I may be pardoned should any of my figures slightly err.

The development in this direction is greatest on the Continent. Probably the largest cargo boat of this class on the stocks is the France, an auxiliary of 10,730 tons loaded displacement and 6,100 gross tonnage, which is being fitted with two 1,000 h.p. Schneider-Carel

(*Continued on page 78.*)



Key to Reference Letters.

A, cylinder of air pump for pumping scavenging air.
B, scavenging air receiver.
CC, air bottles containing high pressure air for starting and spraying fuel.
D, enclosed vertical shaft for driving camshaft.
E, camshaft.
F F, fuel pumps.
G G G, fuel inlet valves.
H, starting air distributor.
II, starting air pipes to cylinder.
J, fuel control.
K, starting air control and reverse.
L L, fuel pipes to inlet valves.
M, tachometer.

Sulzer Brothers Diesel-type marine engine.

This engine works on the two-cycle principle, every down stroke in each of the four power cylinders being a power stroke. At the forward end of the power cylinders there is a large air compressor cylinder through which passes all of the air used in the power cylinders. This scavenging air is compressed to a pressure of from 5 to 7 lbs. per square inch, and is stored in a receiver at the side of the motor.

When the piston in any of the power cylinders approaches the bottom end of its stroke, it uncovers ports in the cylinder wall through which the burnt gases escape. A moment later it uncovers another set of ports in the cylinder wall through which enters air under pressure from the scavenging air receiver, which blows out the remainder of the spent gases and completely fills the cylinder with pure air. During the upward stroke of the piston the air is compressed to a pressure of about 500 lbs. per square inch. This rise in pressure is accompanied by a rise in the temperature of the air, and when the piston reaches the top end of the stroke the air in the cylinder is at nearly 1,000 degrees Fahr.

At that moment the fuel inlet valve, which is controlled by means of a camshaft running at the same speed as the crankshaft, opens and allows a very rich mixture of fuel and air to enter the cylinder. The mixture continues to flow into the cylinder while the piston completes about 1/10 of its down stroke, and during this period the pressure remains at about the same point as at the end of the compression stroke, viz., 500 lbs. per square inch. As soon as the supply fuel ceases the pressure in the cylinder begins to drop in about the same way as in an ordinary gasoline engine cylinder, and at the time the exhaust port is open, after 6/7 of the stroke has been completed, it is down to about one-tenth the initial pressure.

The amount of fuel fed to the cylinder at each down stroke is measured off by a piston pump, and is finally sprayed by means of air at about 700 lbs. per square inch pressure, in a chamber directly over the inlet valve. The same air which is used for spraying the fuel is also used for starting the motor, and a separate set of valves are provided for admitting the starting air to the cylinders. The two sets of valves, viz., the starting air inlet valves and the fuel inlet valves, are controlled from the camshaft running parallel with the cylinders near their top.

How to Build a Turning Buoy.

Seven Methods of Constructing Practical Turning Marks for the Motor Boat Race Course. Timely Suggestions on This Essential Feature of Every Club's Equipment.

THE PRIZE CONTEST—Answers to the First Question in the June Issue.

The Keg Buoy.

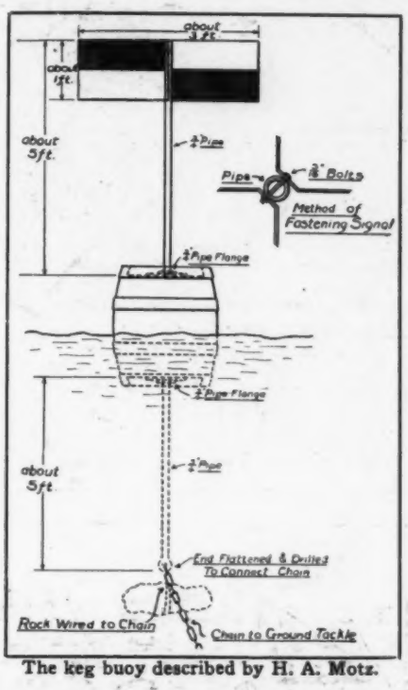
The Prize Winning Answer.

A PRACTICAL turning buoy can be made very readily, without an expensive outlay. As shown in the accompanying sketch, take an ordinary keg and fasten a piece of three-quarter inch galvanized pipe to each head, by means of a three-quarter inch floor-flange. The top pipe can be made about five feet long and the lower one to suit conditions. The longer the latter one is made, the stronger will be the tendency for the buoy to remain upright in a stiff wind. A suitable size rock should be hung on the end of the lower pipe for ballast, as shown in sketch.

The buoy can then be anchored by means of a rope or chain to a good size rock or other mooring device.

The signal for the top of the buoy should be readily seen from all directions. The most suitable form for this would be one with four blades at right angles to each other, made of heavy tin or galvanized iron, in two pieces, bent and bolted to the pipe, as shown in detail sketch. These blades may be of any shape desired and should be painted a conspicuous color, such as red and white. This buoy is very easily taken apart for storing and with proper care will last through many racing seasons.

HARRY A. MOTZ, Philadelphia, Pa.



The keg buoy described by H. A. Motz.

Borrow a Tender.

WHEN we hold our motor boat races in Winthrop, we usually use a flag flying from the top of a pole, as this can be seen at a sufficient distance to be of more value than a buoy.

The poles from which the flags are flown are mounted in tenders borrowed from club members, but of course while all are ready to loan their tenders for this purpose, no one wishes to have nails or screws put into the floor or sides, and so we mount the poles as shown in the accompanying photographs.

The poles are about 12 feet long and are held upright in the tenders by the use of four guy ropes attached to the oar locks or side stringers when possible and to boat builders' clamps when nothing else is available. The socket for the lower end of the pole to rest in is made of a piece of plank clamped to the seat with two more clamps. By protecting the woodwork of the tender with blocks of wood under the clamps damage to the boat is avoided.

The expense of a turning mark of this description is so small that it need not be taken into account, it consisting only of a small amount of light line and a few poles. The clamps can be borrowed from some club member who purchased clamps when he built his own boat.

KATHARINE EDWARDS, Winthrop, Mass.

THE PRIZE CONTEST IN QUESTIONS AND ANSWERS

IT IS JUST about this time of year that the regatta committee casts about for some means of marking the race course, and, unless the club is provided with a good set of marking buoys, those improvised on the spur of the moment are apt to be a pretty crude affairs, usually too small to be seen any great distance, or else so constructed as to be difficult to "pick up." Have you ever approached a flag buoy in line with the direction of the wind, or hunted for one that had capsized? Probably. Well, anyhow, those illustrated and described in the answers to the first question are all good ones and may offer suggestions.

THE IMPORTANCE of ballast and the still greater importance of its position in the hull, are facts too little appreciated by many of the motor boating fraternity, and especially by the new members. If your boat does not behave as she should in a seaway, in nine cases out of ten the fault may be at least partially corrected bv attention to the ballast. Even poor designing may frequently be overcome by proper ballasting. Therefore the second question and a lot of good answers.

THE ANSWERS to the third question contain a lot of suggestions of value to those who are to cruise through canals for the first time. "Locking through" and the equipment needed are discussed especially, and with the "keys" contained in these answers, the locks should loose their terrors.

THE QUESTIONS FOR THE OCTOBER CONTEST ARE THESE:

What did you learn when putting your boat into commission last Spring that will determine what is to be done to her when hauled out for the Winter?

Suggested by M. H. H., Buffalo, N. Y.

Suggest a method of installing a system of running water in a moderate sized cruiser. Sketches if necessary.

Suggested by Fred A. Ziem, Alpena, Mich.

What points in regard to tides and their action in relation to river currents, winds, etc., would be of value to the motor boat skipper?

Suggested by G. M. L., New York City.

ANSWERS to these questions, addressed to the Editor of MOTOR BOATING, 381 Fourth Ave., New York, must be: (*a*) In our hands on or before August 25, (*b*) not over 500 words long, (*c*) written on one side of the paper only, (*d*) accompanied by the senders' names and addresses. (The name will be withheld and initials or a pseudonym used if this is desired.) Questions for the next contest should reach us on or before the 25th of August.

THE PRIZES ARE:

For each of the best answers to the questions above, *any article* advertised in MOTOR BOATING, of which the advertised price does not exceed $25, or a credit of $25 on *any article* advertised in MOTOR BOATING, which sells for more than that amount.

(*There are three prizes, one for each question, and a contestant need send in an answer to but one, if he does not care to answer all.*)

For each of the questions selected for use in the next contest, *any article* advertised in MOTOR BOATING, of which the advertised price does not exceed $5, or a credit of $5 on *any article* advertised in MOTOR BOATING, which sells for more than that amount.

For all non prize-winning answers published we will pay space rates.

When you send in your answer, state what you will take if you win the prize.

Use "Shapes," Not Flags.

THE buoy for a turn in a race course must be able to take the wash of the racers, collisions and general rough usage, and still stand upright in full view. It must be simple to build and cheap, to be forgotten after the race without great financial loss.

A hammer and saw with a few nails will build the buoy shown in Figure 1. Two pieces of 2 in. x 8 in. spruce plank 4 ft. long are nailed together at right angles, one on top of the other. An upright 2½ in. or 3 in. square is to be nailed or mortised to the center of the top plank and stayed at the top with four guys. These guys may be fastened to the outer end of the planks with eyebolts or by boring a hole, sticking the guy rope through and knotting it on the under side. The anchor line can be passed diagonally around the intersection of the two planks and made fast, but an iron bail is better and will fasten two planks more firmly together as shown in Figure 2.

For the mark itself, "shapes" are best. A flag, though very simple makes a poor mark, as it will only show in a breeze and not even then if head on. A ball, cone or cylinder are the most easily distinguished and easiest built. Each "shape" is made of four pieces cut as shown in Figure 3, and may be made of light boards or cloth stretched on a wire frame. The four pieces are fastened to the upright on the buoy at right angles to each other and a light guy line around the outer edge. At even a short distance away the semi-circles will look like a ball, the right triangle a cone and the rectangle a cylinder. They should be colored black, white or red, which will give nine distinctive marks, if so many are needed.

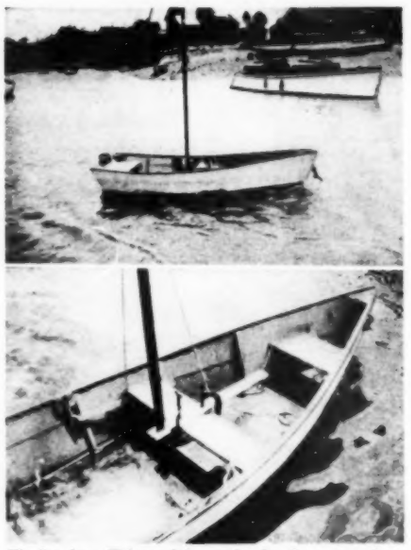
WM. GEO. ALLEN, Portland, Me.

Cheap and Easily Built.

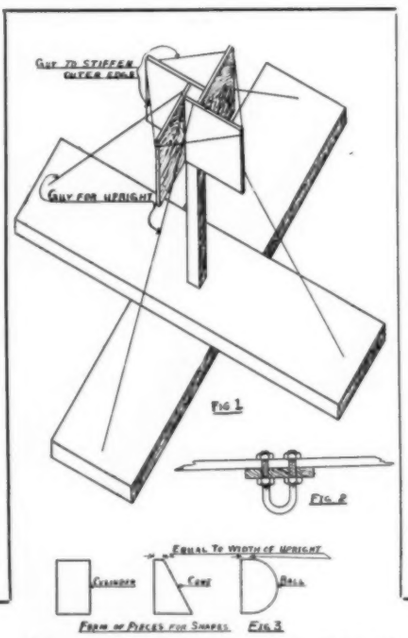
DON'T use flags. If the wind blows them toward or from an approaching boat, they can't be seen from any distance. Take two ordinary barrel hoops, about twenty inches diameter, and fasten them to one end of a ten-foot stick two inches square, at right angles to each other. Sew white cheesecloth over the hoops as a cover, or else if you want to make a neater job stretch it flat over each hoop. The latter is a harder way but not difficult if battens are used to hold the cloth along the intersection of the circles. Use white, for it can be easily seen with a light or dark background of water, sky or shore.

This pole may then be stuck up in a dinghy, but it's much better to nail a couple of four-foot pieces of 2 in. x 4 in. joist to the lower end and to tie a weight to them heavy enough to sink the joists but to leave the stick projecting above the surface of the water.

Affix an anchor line to the joists one foot below their upper ends.



Katherine Edwards' method of converting a tender into a turning buoy.



The crossed-plank buoy and "shapes" suggested by W. G. Allen.

Neither currents, winds nor waves have much of an effect upon a buoy thus constructed. It cannot tip over and is not easily fouled. E. W. MARSHALL, New York City.

A Simple Turning Buoy.

IN the sketch the letters A, B, C, etc., designate the various pieces used in the construction of the turning buoy. The different pieces marked by the same letter are supposed to be equal in size.

A represents two barrel hoops nailed together at right angles to form a near-sphere. After the buoy is completed this ball should be covered with cloth of the desired color. These staves are in turn nailed to a triangular block of wood, F, to which the supports, B, are nailed or screwed.

The foundation is formed of three timbers, E, which are fastened together in the form of a triangle; and from each corner a support, B, goes to the block F.

Three ropes or chains of equal length, C, are fastened to the corners of the base and come together at a ring, T, to which the mooring line is fastened.

A word as to sizes: The braces, B, should not be over 1½ times as long as the foundation, E, as otherwise the buoy would be liable to tip over in the wash thrown by the racers. Make the buoy big if there is to be any high speed racing, as you want the steersman to be able to see it through the spray. Of course, this buoy must be made of some light, dry wood in order to float. For foundations 6 ft. long there should be a cross-sectional area of at least 12 sq. in. The braces for this size may be about 1 x 4 or 1 x 6 inches.

The builder might use some pains in building this buoy, in which case it might pay to put the thing together with bolts, etc., so that when fall comes it can be taken apart and stored. E. K. HILL, Marquette, Mich.

A Float of Oil Barrels.

MATERIALS required:

2 tight oil barrels.

2 pieces—4 in. x 4 in., 9 inches longer than the barrels.

2 pieces—4 in. x 4 in., 4 inches longer than twice the diameter of the barrels at their largest part.

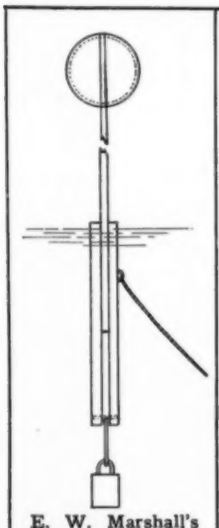
1 piece—4 in. x 6 in., 9 inches longer than the barrels.

4 triangular blocks—4 in. x 4 in.—8 inches long.

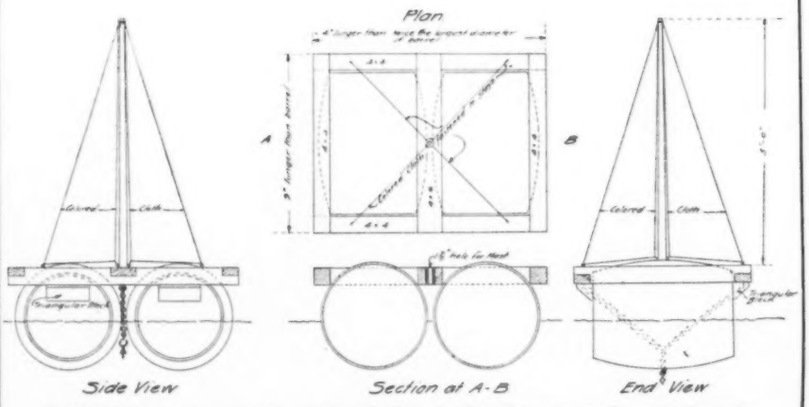
1 piece of spar, 2 inches in diameter at the base, 5 feet 4 inches long.

Galvanized wire for stays.

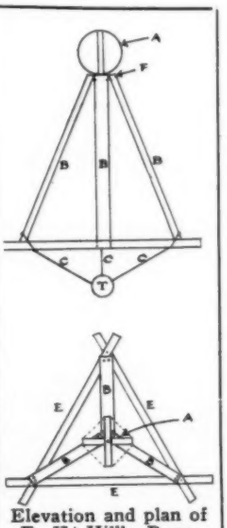
8 screw eyes, or small ring bolts.



E. W. Marshall's simple buoy.



C. M. Harrington suggests a buoy of "four by fours" supported on oil barrels.



Elevation and plan of E. K. Hill's Buoy.

2 larger ring bolts for anchor chains.
Directions:

Make a frame by joining the 4 x 4 pieces as shown in the plan, with the 4 x 6 piece exactly in the center of the frame. Bore a 1⅞-inch hole in the center of this last piece to receive the mast which may be a piece of an old spar.

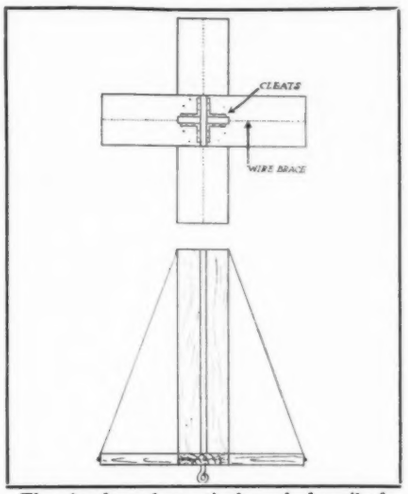
Place the frame over the barrels and secure them in place by fastening a triangular block to each barrel head and to the underside of the frame with screws. Put 4 screw eyes or ring bolts into the frame on the upper side so that each will be at the corner of a square, with the mast at the intersection of the diagonals. Step the mast and secure by wire stays from the top of the mast to these screw eyes. To each stay attach a triangular piece of bright colored cloth, completely filling the space between the stay and the mast, securing the inner corners to screw eyes at the foot of the mast. At the outer ends of the 4 x 6 piece put larger ring bolts on the under side of the frame for the anchor chains.

Any tendency to capsize in a strong wind may be obviated by putting a few gallons of water in each barrel for ballast.

This buoy will make a good mark to steer to, can be seen a long distance, is inexpensive and can be easily and quickly made with simple tools.

By varying the color of the cloth any quantity of different buoys can be made.

CHAS. MAYO HARRINGTON,
Worcester, Mass.



The simple and practical mark described by F. M. Royce.

Crossed Planks.

A VERY cheap but practicable turning buoy may be constructed in a short time by any amateur "jack-knife" carpenter if he is familiar with the complicated workings of a hammer and saw.

Two 2-inch pine planks 4 to 6 feet long and about 1 foot wide, crossed at right angles and securely nailed forms the foundation. Placed on top of these and in a vertical position are two 1-inch boards about four feet long, also at right angles to each other, braced at the bottom by cleats and at the top by wires running to the end of the planks. A large screw-eye inserted from the under side serves to fasten the anchor rope.

This buoy may be built any size to suit the waters where it is to be used; and may be painted any bright color to readily catch the eye.

The great advantage of this style of buoy over a flag is that the boards forming the top being placed at right angles to each other, they always present a broad surface to the eye, whereas a flag is very hard to see if you are approaching it either directly with or against the wind. If a flag also is desired a hole may be bored in the center of the vertical boards and a flagstaff inserted.

F. M. ROYCE, Penn Yan, N. Y.

Ballasting the Cruiser.

The Principal Methods, Considering the Most Suitable Materials, Their Cost and Space Occupied. How the Placing of the Ballast Affects the Behavior of the Boat.

THE PRIZE CONTEST—Answers to the Second Question in the June Issue.

Use Moulds for Concrete.

The Prize Winning Answer.

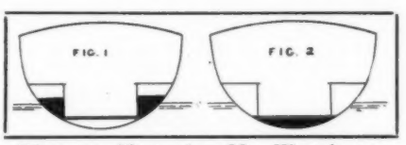
ONE of the best materials for ballasting any boat taking cost, space occupied and stability into consideration is concrete. As a suitable material it offers all the advantages of lead except in the matter of weight per cu. ft. Still this advantage is overcome by the convenient forms it can be worked into, and the saving in cost. Another item in its favor is the fact that it can be made by anyone and anywhere.

Many favor the idea of pouring it between the ribs and allowing it to form a solid mass there. While this idea may be all right still it has the disadvantage when hauling out time arrives, as it is impossible to remove all this added weight. A better scheme is to make rough forms of the space to be filled and mould blocks that can be easily handled either by inserting ring bolts or wire handles in them before it sets. These blocks can be made so they fill up the space under the floor boards and if necessary may be extended up the sides, as experience has shown that beyond a certain limit the ballast carried above the center of gravity is as good if not better than that carried below.

In mixing select the best grade of cement and use three parts of a good gritty sand (not sea shore sand as it is smooth and does not hold well together) to one of cement. Small cut stone may be added if desired with good effect but it will be necessary to face up the blocks after they are taken out of the forms to hide the stones and give the blocks a good smooth surface. In using cut stone it is necessary to wet it thoroughly before adding.

The amount of ballast needed can only be determined for each individual case after repeated tests and my advice is not to use any more than is absolutely necessary as it only increases the wear and tear on the boat and makes just that much more dead weight.

EWING A. CRAWFORD, Newark, N. J.



Diagrams illustrating Mr. Wyatt's experiments.

How to Use Cement.

THE governing factors in ballasting a small cruiser are the space which can be devoted to ballast, and to most of us the cost of material used. Of course, with a very small space a material that is comparatively heavy must be used to get sufficient weight.

The three substances used mostly for ballast in motor boats are pig lead, iron in the form of window weights, and cement. Lead weighs 709 pounds per cubic foot, iron 450 pounds and cement 130 pounds. This weight of cement will vary slightly with the proportion of sand and stone used. From these weights you can decide which material you can best use, bearing in mind that, while lead and iron are liable to shift if the boat should roll or pitch severely, if not packed in tightly under the floor or fastened down in some manner, cement is poured into the hull and allowed to set and cannot shift.

As to cost, second-hand window weights can be obtained from a building wrecker for a dollar a hundred pounds, pig lead from most marine supply houses at $5.50 per hundred and cement at 65c. per hundred for the cement in bags. The sand you can probably get on the beach or very cheaply from some builder. These prices are of course approximate only and will vary with the locality in which you live.

When sufficient space is available, the up-to-date practice is to use cement, and therefore I will describe the method of applying it. In using cement, the best method is to lie at a wharf or float where you can mix the cement in about the proportion of one part cement, two parts sand and four parts stone, and right here let me say that the beach stones that have been worn round by the action of the waves are the best for ballast, as these will not hold the mass together so strongly but that you can break it up with a cold chisel in case you want to get it out of the boat at some future time.

Get from a grocer a large box about two by four feet or larger. Mix the cement in this, by first putting in the cement, then the sand and thoroughly mixing the two, then add the water and the stone. When thoroughly mixed to about the consistency of mortar as used in brick laying, take it aboard by the bucketful and pour it under the floor or into boxes screwed down under the transoms. The boat should be pumped out dry before the cement is taken aboard. Distribute it well fore and aft, otherwise the boat may pitch considerably. The cement will set in a day or so and will not shift after it has hardened.

By a very simple experiment it can be proved that a given weight divided and placed as in Figure 1, will cause the boat to roll slower than if the same weight is placed as in Figure 2. Cut a circle of cardboard about a foot in diameter and pin it through the center to the edge of a table in a vertical position so it can revolve freely. Now, take a block of wood of about one or two pounds' weight and tack it to the edge of the cardboard circle. Move this weight until it is at an angle of say 30 degrees to the perpendicular, and let go, noting the speed with which this weight returns to the bottom of the circle. Now, split this block and attach the two halves to the edge of the circle about 60 degrees apart. Move the circle as much as before and again note the speed. You will find that it is much slower than in the former experiment, also that the cardboard comes to rest much more quickly than before. This would indicate to us that we must divide our ballast into two equal parts and place it as far each side of the keel as possible. Of

course there are factors that come into play in actual practice that do not enter into the experiment with the cardboard circle, such as buoyancy and the varying meta center which varies with different angles through which the hull may heel, but we can disregard these, as these do not affect the result but only modify it slightly.

The amount of ballast to use can be determined by some rather intricate calculations, or by actual experiment. The latter is in the end more satisfactory, and by inspecting the water line from time to time as the ballast is added, the right amount can be ascertained. If the cement does not come above the tops of the floor timbers, cut notches or bore holes in them so that the bilge water will run to the lowest point where there should be a well from which to pump.

Thomas Hall Wyatt, Winthrop, Mass.

Ballast by Experiment.

After you decide that the boat needs ballasting float her into smooth water and see just how she rides. Have the usual weights on board and study her trim with the idea of deciding just what is wanted to make her ride as desired. If you find that all that is wanted is to bring her down by the bow or stern a little, this undoubtedly can be easily done by a little shifting of the weights all ready on board.

If, however, it is decided that more ballast is what is wanted another problem is presented. First, how much is needed? and second, how much room is there in which to stow it? The first question may be settled by putting weight of any kind on board until the proper trim is obtained and then the trick is to transfer this weight into suitable material and get it into the space which is allowed for it.

If the space is unlimited almost any old thing can be used; in fact, the cat boat men along the Sound prefer field stone to any other form of ballast, and some of the power boat men are being converted to this idea; but if the space is limited it may involve lead moulded to shape which is very expensive. In some cases Portland cement is run round the ballast and allowed to set. While this method does not allow the ballast to shift it makes it hard to get at a leak if necessary and it is claimed by some that the sand works down inside the hull and causes a constant wear.

The kinds of ballast will run from the field stone and sand bags through the various forms of scrap iron to the moulded lead shapes, depending upon the weight wanted and the space which is available for stowing it; and possibly the length of one's pocketbook may have some influence on it also. Keeping the ballast as low as possible in the hull and well distributed both lengthwise and athwart ship tends to give the easier riding craft in a sea way. F. M. Comee, Cambridge, Mass.

Advises Concrete.

The best and cheapest ballast for a cruiser is concrete. Even considering its lighter weight, it takes up less room than iron or other loose ballast, stays where it is put and will not shift as so often happens with hand ballast and other loose kinds. It is cheap, costs about 20c. per cubic foot including labor to do the heavy work, and if carefully and properly applied will strengthen and preserve the boat.

First, clean out the inside of hull thoroughly and wash well with washing soda or one of the prepared washing powders put up for this kind of work; do not slight this because it seems like a dirty mean job, for it is important as it removes all the foul scum that has accumulated, leaving boat sweet and sanitary, and most important of all, it prevents decay. When dry give a good coat of paint; creosote paint sold by all boat supply houses is best.

Concrete is usually made of macadam, sand and cement and may be made with gravel for ballast, but just sand and cement is much better as it can be worked into the small places as between ribs, along keel and stringers, and as this gives the mass a sort of key and holds it firmly, it also helps to stiffen the boat.

As all the cement companies publish mixing formulas for use with their brands of cement and distribute them free it would be best not to attempt to give any general rule here but be sure to remember that all cements must be thoroughly mixed and then mixed some more as almost every case of cracking or crumbling is caused by poor mixing; use sand that has a rough "tooth" and not a round smooth grain as the cement will take a better grip on the rough sand and make a very much stronger and better lasting job. As there is a great difference in sand it would be best to get the opinion of a good concrete contractor as to what is the best local sand and be sure that it is clean and has no mud in it.

When putting it into boat get it well spread out to the sides, well worked into spaces between ribs, stringers, etc., and trowel thoroughly as this makes it compact and less likely to absorb water; it is best to have it mixed as thin as can easily be worked; make a well or depression in lowest part of boat for the bilge water to drain into. When thoroughly dry it may be given a good coat of creosote paint or one made of linseed oil and parafine wax hot, 2 lbs. to the gallon, thinned with a little turpentine.

Do not put too much weight in center of boat as this will make it very sensitive and uncomfortable in rough water. Try arranging equipment, fuel tanks, icebox, toilet, sink and supplies out to the sides, as this will often work wonders in making a steady, easy boat.

In extreme cases where engine and all principal weight is low and in center of boat and it is very sensitive, rolling quick and hard, get some pieces of iron pipe, say six inches, from a junk yard, fill with concrete and strap to deck beams at sheer strake.

About the easiest and best way to find just how much ballast to use and where to put it is to load on a lot of small rocks, place these around to best advantage, keep arranging them, taking on more or throwing some overboard until boat acts about as you think it should; then weigh them, making a note of how much and where placed. Then when putting in the concrete you can easily put it just where it is wanted. E. A. L., St. Louis, Mo.

Cost the Governing Factor.

In choosing material for ballasting a cruiser the question of cost will be the governing factor. As far as suitability is concerned that is no doubt that metal, either lead or iron cast to fit the boat, gives the best satisfaction, especially on the basis of space occupied.

Ordinary bricks, pig iron or lead, and Portland cement bags filled almost half full of clean sand or round stones are very good and cheap substitutes. All ballast should be arranged so that in the event of accident it can be got at and thrown overboard. With this end in view metal ballast cast for the purpose should be provided with some sort of a grip. When bags are used the tied end makes a good handle.

The fore and aft position of the ballast is best decided on after the boat is in the water and fully equipped with engine, fuel and water tanks, etc. The fuel tanks should always be placed as near amidships as possible so that the amount of fuel they contain will not effect the trim of the boat to any extent. This is not of great importance, however, on medium sized cruisers.

If the lines of the boat and other weights will permit, most of the ballast should be placed aft of the center. This arrangement allows the boat to lift well in a head sea, and holds the boat down when the bottom has the most bearing, thus steadying the boat.

It has been found that in motor boats the best results are obtained when the ballast is kept away from the keel. By this means when the boat rolls she recovers slowly, whereas, if the weights are on the keel the action of the boat will be very quick resulting in great discomfort to the occupants. In very narrow cruisers it is often found necessary to place weights, such as water tanks, etc., on deck to make this comfortable. While it is true that ballast will cut down the speed of a boat to some extent it is good policy to have enough to make the boat safe. With the high sided cruisers now being built ballast is very necessary. If the engine gives out in a heavy sea any boat is liable to roll over and it adds to one's piece of mind to know that most of the weight is on the bottom of the boat and not on top.

F. W. Maloney, New Haven, Conn.

Taking Her Through the Canals.

Some of the Things to be Remembered in Navigating These Inland Water Ways. "Locking Through," How it is Done, and the Equipment Necessary.

THE PRIZE CONTEST—Answers to the Third Question in the June Issue.

The motor boatman who has not "canaled it," has in store a novel experience that will give added zest to this king of summer sports; the equipment is inexpensive, can be stowed away anywhere, and kept from year to year.

After touring for several years on the inland waters of the United States and Canada, I have found the following equipment to fulfill every requirement. Get six or seven bags—oats bags are exceptionally good—stuff them with hay, straw, or better still, excelsior, with a good strong rope to tie up the open end; or, if you are a bit particular, sew the bag shut with a rope fastened to each top corner. Drop these alongside like fenders; they are far superior, for the cork fender will burst from the pressure and the woven one will roll around and cut the sustaining rope in short order; then put a bag around the bow, covering the stem. An old piece of steamboat hawser, the bigger the better, festooned along the sides and coming down to the waters' edge, will form a protection that I have never seen equalled, for at some stage of the rise and fall, every part of the hull is exposed to the rough stones. Have a good long bow and stern line, not less than seventy-five feet, and of a size suitable for your boat; make one end fast to a cleat and coil the other for heaving.

Run into the lock slowly, about half way up is good practice, then throw your line to the locktender, who will pass it around a "snubbing post," and give you the free end, which you haul taut. At the first rush of water there is always a backward movement,

Use Bags of Straw.

The Prize Winning Answer.

checked by the bow line, but the reflex action is much stronger, and will send you forward so quickly that without the restraining stern line, you would surely "buck the sill" with disastrous results. As the water rises in the lock keep the forward line taut, holding the bow well into the side of the lock, and the stern a little out, for in this way the boat will slide up the side and against the bags, the water going around and underneath; but if you let the bow get out into the rushing center you are pretty sure of a hard knock against the other side. Here, again, the stuffed bags take the brunt and so easily you hardly know it. When a lock is full the water is almost level with the top of the wall, and here the rope festoons keep you away at every point.

When the lockman says go ahead (never start without his signal) you merely haul in your line without leaving the boat, and coil it away for the next time. The "drop down" is much easier, you pass the line around the post as before and pay out as you descend—this time your stern will swing—when the lower gate is open. Two short pikes or boat hooks are frequently of service in "keeping off" when in a lock. With this simple outfit I have handled a forty-foot cruiser for several years, and found it amply adequate for all purposes.

MATT MCCARTY, Albany, N. Y.

Most Lock Tenders Smoke.

TAKING a motor boat through a canal is a "cinch" for those in this locality. We have 90 miles of waterway with 35 locks; some of the levels are barely a mile long.

The first restriction to guard against is speed—you must throttle down to 4 to 6 miles per hour. Next thing to beware of is the eel grass. Some canals are grown full of it and unless you are always on the alert your propeller will be choked up with weeds. Steer clear of all canal boats—be sure never to pass under their line—and don't try and pass through an aqueduct at the same time that they do.

In "locking through" don't go too near the gates when they are emptying the lock. Your boat is liable to swing around and put you in an annoying position. If you have a gear throw out and hang up to the lower end of the cribbing and after gates are open proceed slowly.

Many locks have ropes hanging down for the use of canoeists. Get a hold on one of these ropes if you can. In going up don't get too near the rear end as the water raising may catch your boat under some projection on rear gates. Stay away from the gate when the water is let in. If you get too close there's a rush and swirl of water that makes it hard to hold on.

Going through a lock down stream is far easier than up stream. Enter and stay at rear end of lock until water is down to the lower level.

If the walls are cemented or stone, boat hooks will be of little use. Many of the locks have been planked and boat hooks can be used to advantage.

Find out if it is cheaper to buy a straight passage or if you can buy trip tickets or pay mileage. Customs are different in different localities and in Reading if you pay at each lock it's 25c.; if you buy tickets it's 16c. and cheaper if you buy a pass at Philadelphia to Port Clinton and return.

Always make sure of the gasoline supply stations and make occasional inquiries of the lock tenders as to the channel. Often you may have a mile or two where the river and the canal are one. When you strike these places going down stream never venture on the outside of the cribbing and see how close to the dam breast you can go.

Remember that the lock tender is usually a pretty good fellow and likes to smoke good cigars.

E. L. HETTINGER, Reading, Pa.

For New York State.

THERE need be no difficulty in navigating the canals of New York State. The following points cover the whole matter.

1. It is necessary to have a permit from the State Department of Public Works, which can be had free upon application. In applying give name and description of boat, owner's name and sailing port. On the back of the permit are printed the state regulations in regard to use of the canals by pleasure craft.

2. While the canals are supposed to accommodate boats of seven feet draft, mud deposits in places make this doubtful, but six feet is safe. In running beware of the "heel path" side as this bank is not always in good repair. Never moor the boat on the tow-path side as it would be in the way of horse-drawn boats.

3. At the locks have boat under perfect control. Locks are usually double, a single boat lock on one side and a two-boat lock on the other. The single lock is ninety-six feet long. Lock tenders prefer to have small boats take the short lock. The only rule is to enter the lock when gates open, and keep the boat from getting too close to the gates at either end. When the water has reached its level the gates at the outgoing end will be opened. The state rules forbid the lockmen receiving tips.

4. At the lift bridges be sure the bridge is securely up. A falling bridge might be disastrous.

5. In passing commercial craft go slowly. The wash from another boat is often very disconcerting to their steersman. In fact, it is to be remembered that the canals were built for commercial purposes and their use by pleasure craft is a concession.

WARREN C. TAYLOR, Frankfort, N. Y.

Spruce Tenders the Best.

THE first step in using canals is to get your permit from the secretary of state, or whoever is in authority. In New York state write a letter mentioning which canal you expect to use and give name of boat and captain and you will receive your permit by mail.

Fenders.—After trying canvas, rope and knitted fenders, I have finally settled on 2 x 4 spruce fenders tapered for about 6 inches to 1½ x 2 and with a ¾ in. hole bored through the 4 in. way at bottom of taper. This fender is attached with a ¼ in. manila rope passed through the hole and tied with a bowline about three inches above top of fender. On my boat the fender is made fast to hand-rail of cabin roof and top of fender hangs about six inches above wear strake. These fenders will very seldom slide out of place as their weight will straighten them up if they slide a bit in the lock. I have used these fenders, four on a side, on a 41-foot cruiser for the past three years and have lost but two which were knocked off by hitting the gate coming out of a lock.

Lines.—Two lines should be furnished, each about 60 feet long and should be at least half-inch, which will be easier on your hands than a smaller line. Four-ply manila bolt rope is very soft and flexible and costs but little more than ordinary manila. The reason for the length of these lines is that in descending you can pass your line around a snubbing post and take the free end back aboard, hold her tight to the lock wall, and when the gates are opened pull your line aboard and proceed. Otherwise you would be compelled to put two of your crew on the wall to hold the lines and then pick them up below the lock.

Locking.—In approaching a lock it is well to stay back about 150 feet until the gates are opened as the swirl that is caused by filling or emptying the lock may cause your boat to bump around more or less. If bound up, place one or two men on the canal bank with bow and stern lines, and run gently into the lock, or let them tow the boat in. Lie as far back in the lock as possible and keep the bow well into the lock wall, as bow will swing right across to other wall if water comes in with a rush and the bow lies out a little from the wall. When lock is full and gates are opened get your crew aboard and proceed.

In descending, enter lock slowly, pass your bow and stern lines around the snubbing posts that are always conveniently located on the top of the lock and proceed as explained in the item regarding lines.

A word about speed limits.—It is well to run as slowly as the law requires at all times because if you should happen to be caught exceeding the speed limit you would most assuredly lose all the time you had saved and possibly some of your vacation money. Treat the lock tenders and canal boatmen well and in 99 cases out of 100 they will put themselves out to accommodate you. If you don't treat them well, you will get just the service you are entitled to and sometimes not that. It doesn't pay to kick, as you are allowed the use of the canal, usually, by courtesy. A few cigars will often be acceptable, as lock tenders smoke.

Small boats usually let one man tend the lines and another man, or woman, fend off. Quite frequently a small boat will lock through with a larger one and hang fast to the side of the larger boat.

EDW. E. HEERMANCE, Hudson, N. Y.

Keep Within Speed Limit.

THE main thing to remember when "canalling" with a motor boat is, "stick to that portion of the lock having the least water disturbance." This means, keep as near the foot gates as possible when going up and the head gates when locking down.

Don't let anyone lead you into believing that it is better to hug the rear of the lock. Many fine boats have lost rudders and propellers by getting hung on the sill when locking down.

Get out the stoutest line you have forward, when going up and aft when going down, and have the lines forward and aft in charge of men who act quickly and obey orders. You don't want your boat to get away and possibly lose the stren by banging on the opposite side of the lock.

Provide plenty of fenders; some like the round canvas cork-filled kind, others the sennet, manila, or a few old potato or coffee sacks filled with hay, excelsior, etc.; another holds to a long plank slung over the side and resting on the potato bags. Personally, the writer prefers the old-fashioned, time-tried wood fenders found on every tugboat.

Get to a cord wood pile and pick out five or six pieces of straight hard wood, each about three inches in diameter. Plane or shave with a draw-knife a bearing surface on each stick. Bore a hole about twelve inches from the light end of the stick, and reeve a piece of rope through the hole.

Stretch the anchor line fore and aft a few times, holding up at frequent intervals with spun yarn stops and then space the wood fenders in such a manner that no part of the hull may brush on the lock wall; also that no part of the fender bears on the hull, but on the anchor rope previously stretched.

When going into a lock enter very slowly, take the favored position, throw the lines over the snubbing posts and hold the boat parallel to the wall. Don't let the tender turn on the water until you are ready, and insist that he turn the water *away* from you. Water under pressure, shooting right at you causes no little banging around, coupled with a great lot of anxiety on your part. Where going down there is practically no water disturbance.

Carry a box of good smokes with you. The average lock tender is a jolly, courteous chap, and it is a pleasure to offer this kind a good cigar, but be careful of the fellow who opens an upper gate with the supposed purpose of washing out debris but with the intent of banging your boat about.

Last, but not least, when you strike a long stretch and are getting tired, don't exceed the speed limit. C. PETERSON, Brooklyn, N. Y.

The Sturdy Hampton Boat.

An Inexpensive Motor Boat Which is the Natural Outgrowth of Conditions at Casco Bay, Maine. An Extremely Interesting Type of Craft Which is as Distinctive as the Dory.

By Allan O. Goold.

BEAUTIFUL Casco Bay is the westernmost of the many great bays which break up the coast line of the state of Maine, into a ragged and, to the cruiser, most alluring succession of broad waterways and bold headlands, with thousands of charming islands, large and small, forming protected channels from point to point, as if placed there on purpose, to encourage the small motor boatman and lend additional charm to this matchless cruising ground.

Casco Bay has become a great summer playground, and is accounted by many not an unworthy rival of the Thousand Island region of the St. Lawrence. But pleasure craft are not alone upon its broad waters, and during the long cold winter, when the boats of the pleasure fleet are snugly housed or shrouded upon their sheltered shores, the sturdy Hampton boats, of the Casco Bay fishermen are braving the storms and the cold off and on the fishing grounds, wresting a not too bountiful living from the icy waters of a storm-swept ocean.

Broad of beam, staunch of build, high-bowed, but not clumsy, the Hampton boat is a wonderful combination of seaworthiness, speed and carrying capacity. Neither is she deficient in good looks, for a good Hampton model is as truly satisfying to the eye of the sailor as any craft that floats. Today, the Hampton boat is universally built with a square transom stern. Her freeboard aft is somewhat reduced, to render possible the convenient handling of lobster pots, or seines, over the side, since at different seasons of the year the service which these boats perform is likely to vary greatly. The rudder, almost invariably of wood, is often hung outside of the transom, although short overhangs are sometimes used, particularly upon boats of the largest size. The Hampton boat is strictly an open boat—the only protection, in the way of decking, being narrow waterways, all round, of six or eight inches in width, supported by turned spindles upon the thwarts. No forward deck is ever used, since in hauling trawls, the trawl-sheave is set in the railway forward, and the men must have a chance to work close to the rail all around the boat. However, an after-deck is used to support the comb for the tiller, as well as to afford necessary locker space. Four heavy oak thwarts cross the boat at intervals, the forward one, in the day when every Hampton boat was a wind-jammer, serving to support the foremast. The two mid-ship thwarts are spaced the length of the centerboard apart, and a bulkhead crosses the hull under the center of each of these thwarts, forming a capacious fish box on either side of the centerbord. Covers are generally provided for these fish boxes, and occasionally also for the remaining compartments. These four bulkheads, of course, stiffen the hull greatly.

The motor is often installed under a housing a little abaft amidships.

Although the present-day Hampton boats rely exclusively upon their motors for propulsion, all the boats are fitted with a centerboard, and

The Hampton boat is an embodiment of those qualities which make for strength and sea-worthiness.

Although depending principally upon the motor, most of the Hampton fleet are equipped with centerboards and carry light rigs.

with the forward mast-step, at least. The full Hampton boat rig formerly consisted of two sprit sails and a small jib, set flying upon a light temporary bowsprit. The foresail was the principal sail, high-peaked, loose-footed, and with double sheets, trimming way aft of the mainmast. The foresprit, a heavy spar, was, in the larger boats, set up with a tackle, and the sails could be made to "set" like the proverbial board. The small mainsail carried a boom, and sheeted down to an iron traveler, or horse, which bridged the tiller. The heel of the mainsprit, a comparatively light spar, was set in a rope becket upon the mast, and was pushed up into position by hand, and occasionally wet, to prevent it from slipping down. Since both sails were of generous area, and the skippers were fond of "carrying on," when racing home to market, the boats carried a cargo of sand-bags, which were piled along the weather wash-board, and added greatly to the craft's sail-carrying ability. Some of the fishermen still talk of a famous race, on a Fourth of July, between the champion boats of Cape Elizabeth and the various islands down the bay. The winner, I think, a Long Island flyer, was said to have carried twenty-eight sand-bags to windward and, since the contest was sailed in a smashing breeze, this extra ballast allowed her to stand up and carry full sail, when her opponents were forced to take off their mainsails. These boats were never reefed, since the mainmast was unshipped in strong breezes, and they then balanced perfectly under the foresail alone. In a gale, the foresprit could be taken down, and with the peak lashed down to the lower mast-hoop, a snug leg-o'-mutton sail was the result. The jib was never used, except in light or medium winds. Under sail, these boats would go to windward wonderfully, and were fast on all points of sailing. The skippers were expert small-boat sailors, and were full of pride in their boats, and this pride, to a great extent, still remains.

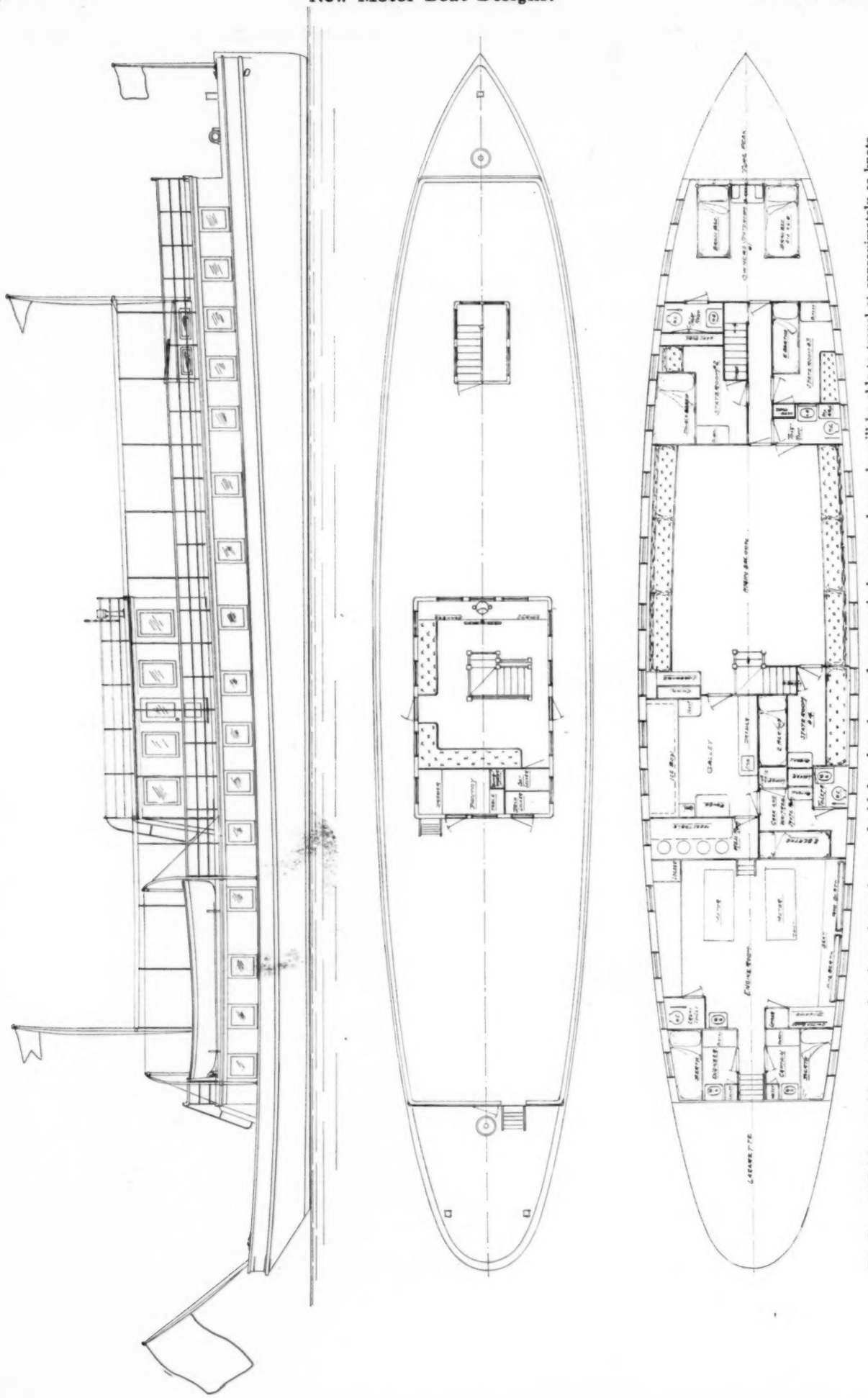
The gasoline motor was introduced among the Hampton boat fleet several years ago. It was welcomed enthusiastically in Casco Bay, as it has been everywhere, among those who go to sea, either for pleasure or for profit. From a beginning of one or two motor-driven boats, eight years ago, the conquest of the motor has become complete, and all but one or two of the many Hampton boats, in Casco Bay waters, are now motor-driven. The new boats are all built for motors, and, while the centerboard is still put in, and the forward mast-step, with its iron half-collar, is always in evidence, the mast and sprit lie unused upon the thwarts, while a small foresail is carried, merely as a matter of precaution, in some little-used locker.

A distinctive feature of these boats is the high freeboard forward.

The Hampton boats are very nearly uniform in size—the range being from nineteen to twenty-four feet, with beams of from six to eight feet, and a usual draft of twenty-two to thirty inches. A motor of from three to five housepower is usually installed, and its location is generally between the aft end of the centerboard trunk, and the thwart next aft of it. This compartment is often fitted with board covers, thus affording the machine a little protection. The outfit itself, is the extreme of simplicity. No reverse gear is ever carried. Often a switch is omitted—the wire from the battery being attached to, or detached from the fixed electrode by hand as it is desired to start or stop the motor. A galvanized tank, of five or ten gallons' capacity, serves for the fuel supply. A magneto is sometimes carried, but I was out in a Hampton boat this summer, which ran on four cells of dry battery, carried over from October, 1909. She had no sail and no reserve ignition outfit whatever.

In build, the Hampton boat is cheap, but strong, and specimens may be seen built upon the lap-streak (clinker), strip, or regular framed and planked (carvel), systems. The lap-streak is the original style of building—many of the older sailing Hamptons being of this construction. Some of these still exist, with the sharp or whaleboat sterns, as built years ago, but these are now seldom seen about the bay. The modern method of building is the edge-nailed strip construction, in which the strips are laid up over molds, and nailed through and through, beginning at the bottom and working up. This is a method giving a very strong, smooth job, at a very low price, and requires no calking. The frames, spaced wide apart, are fitted in after the hull is finished. The strips used are about an inch square, and are of white pine. The timbers are usually of oak. In model, the Hampton boat is a craft of tradition. She never was designed. No "lines," so far as I have been able to learn, are ever drawn for Hampton boats. The builders (mostly fishermen themselves), know instinctively, how to shape the hull, and just how strong each part should be. Seven dollars a foot is a usual price for a well-built hull, among the island builders.

A peculiarity of these boats, is the shapely drawn line of their habitat. Beyond the Kennebec River they are not known.



The lines of Osiris resemble a yacht rather than a house boat, and with her sharp bow and comparatively narrow beam she will be able to travel at approximately 10 knots.

New Motor Boat Designs.

A Fast Houseboat.

OSIRIS, a 110-foot house boat whose plans are shown upon the preceding page, was designed by Morgan Barney, of New York City, and was built by Jas. M. Bayles & Son, Port Jefferson, Long Island, N. Y. She went into commission early in July and it is the owner's intention to take her south in the fall after cruising about the Sound during the summer.

The boat is 104 feet on the water line, has a 20-foot beam and a 5-foot draft, and with her two motors, developing a total of about 150 h.p. she will have a cruising speed of ten knots. It will be noticed that the model is considerably sharper than the ordinary type, the block coefficient being reduced to secure a fair speed with moderate engine power and a considerable degree of seaworthiness.

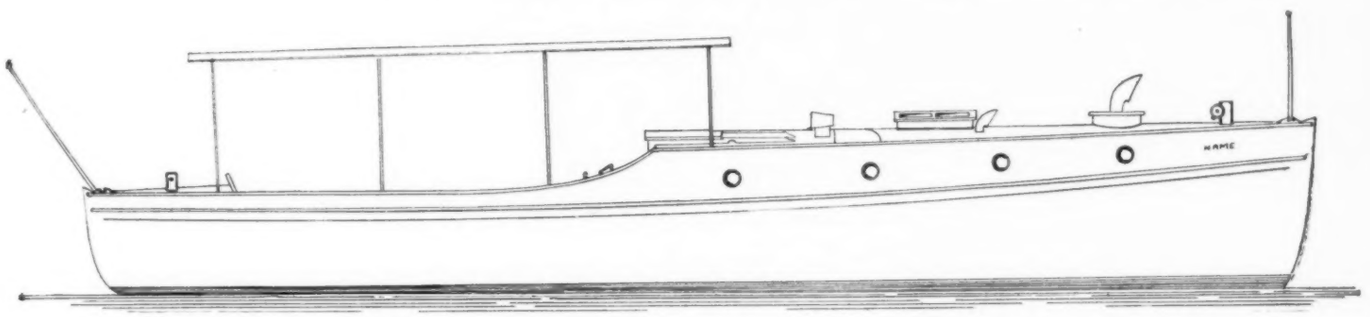
The interior accommodations consist of an owner's stateroom forward with a bath adjoining, and two double staterooms with toilet-room. Aft of these is the main saloon, which is the full width of the vessel and 23 feet long. A stairway leads from this to the house on the upper deck. Aft of the main saloon is another double stateroom, while the galley is on the port side. Aft of the galley is the mess room for the crew, and across from it on the starboard side is a room for the cook and steward.

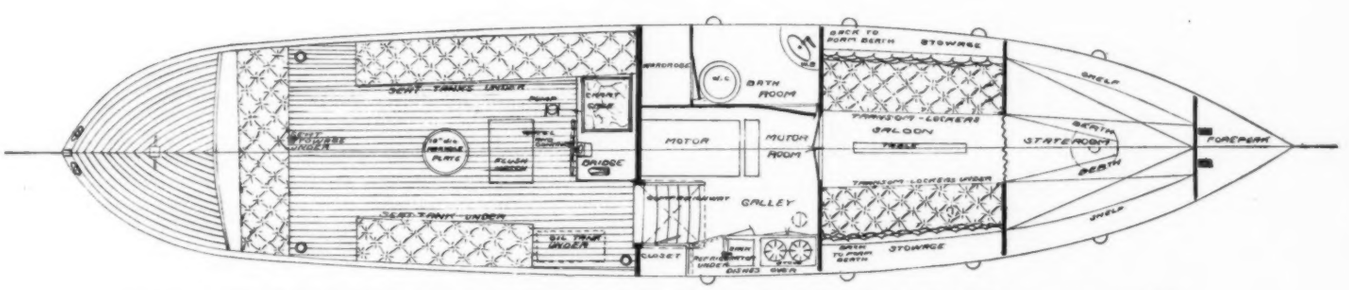
There are separate rooms for the captain and engineer, which are located aft of the engine room, and the crew are berthed on either side of the engine room. The upper deck is unusually large, measuring 84 feet in length. The boat is lighted throughout by electricity, and power is supplied for operating the windlass and hoisting boats.

The hull is very heavily built and bilge keels are provided. The frames are of oak and chestnut and the planking is of pine. The interior finish is cypress stained brown and the exterior finish is white. The decks are of white pine and the upper decks are canvassed.

The power is supplied by two Murray & Tregurtha engines, four-cylinder, having a bore of 8½ inches and a stroke of 11 inches. The fuel tanks have a capacity of 1,100 gallons and are located at the sides of the engine room. The water tank, which is under the cabin floor, has a capacity of 800 gallons.

If all the transoms are included the sleeping accommodations are practically unlimited. A large icebox is provided in the galley and numerous lockers and closets are built in so that there is no space wasted. The steering arrangements are located in the deck house.





This 40-foot cruiser can make 15 miles per hour and her large area of water line aft effectually prevents squatting.

A 40-Foot High Speed Cruiser.

THE Adams Shipbuilding Company, of East Boothbay, Me., have recently designed the high speed cruiser whose plans are shown above. All top hamper is discarded in the construction of this craft, no mast, funnel, or any deck obstruction being provided. This adds to the seaworthiness of the boat as a cruiser since, in rough weather, covers may be put on the skylight and hatches and the cowls reversed. All resistance due to wind pressure upon these fittings is also saved.

The dimensions of this boat are 40 feet over-all, 37 feet 6 inches water line, 8 feet beam, and 3 feet 6 inches draft. The least freeboard is 3 feet 4 inches. The freeboard forward is 5 feet 4 inches.

The cockpit is 14 feet long and is arranged for comfortable cruising. The wheel and motor controls are brought to the bridge deck at the forward end, where is also conveniently placed a chart case, providing excellent facilities for the navigator in a long distance race for which this craft is eminently suited.

Under the side seats are two 75-gallon gasoline tanks and under the deck is a large oil tank. The motor is a 6-cylinder, 4-cycle Blount & Lovell weighing 1,450 pounds and developing 54 h.p. at 600 r.p.m. This is located amidships and partly under the house. Water tanks, anchors, etc., are so placed in the ends of the boat as to preserve the best balance.

The sides of the boat are carried up to form the cockpit sides and the bow sections are extremely well flared. The headroom is 6 feet clear and the motor room is well equipped with a galley. The saloon is arranged for sleeping four, the transom backs hinging up to form berths, while high berths in the stateroom sleep two more. It can thus be seen that ample accommodations are provided for a party of considerable size. The ventilation is cared for by cowls and Auto-force ventilators.

The construction is moderately heavy, the planking being of ⅞-inch cedar over 1½ x 1½-inch oak frames on 9-inch centers. Wide stringers and longitudinals are used. The usual speed maintained is about 15 miles per hour.

A cruiser of this type is proving very popular because of its speed and its adaptability either to day running or to a long trip with a fairly large party. The cockpit is of sufficient size to permit all on board to be on deck at the same time without crowding, and in stormy weather the cabin provides sufficient room for all to be comfortable.

The boat can be handled by one man, and the bridge and motor controls are so arranged that the person operating the boat need not be left isolated from the remainder of the party. An awning is supplied to cover the cockpit.

Bonita, An 82-Ft. Cannery Tender.

THE North Alaska Salmon Company's new cannery tender Bonita, which has recently made the trip from San Francisco to Bristol Bay, Alaska, is now being used as a tender between the canneries and the sailing ships of the salmon fleet, and also between the small fishing boats and the canneries. Bonita takes the place of the tender Mizpah, which was destroyed by fire last season at the Kiniaak cannery, shortly after her arrival from San Francisco.

Bonita was built by H. Anderson according to plans by D. W. & R. Z. Dickie and was launched on February 15, 1911. She sailed for Alaska on May 12, 1911.

She was designed so as to have a light draft and at the same time to be able to make the ocean voyage between San Francisco and the canneries. It is necessary in working at the canneries to operate the vessel with the tides owing to the eighteen feet rise and fall.

Bonita is fitted with bilge keels upon which she rests when loading and discharging at the canneries between tides. She has small power which gives her a speed of 6.4 knots in still water, but the six-knot tide on the rivers tributary to Bristol Bay gives her a speed when in service equivalent to twelve knots.

Her principal dimensions are: Length, over guards, 82 ft. 9 in.; length from rabbet of stem to back of sternpost, 73 ft. 4 in.; length from rabbet of stem to back of rudderpost, 77 ft. 9 in.; breadth over planking, 22 ft. 6 in.; extreme breadth over guards, 25 ft.; draft forward complete, no cargo but with fuel and water, forward, 3 ft. 10 in., aft, 4 ft. 11 in.; draft loaded for sea, 6 ft. 2 in. forward, 6 ft. 4 in. aft with 70 tons; depth of hold, 8 ft. ½ in.; length of hold, 29 ft. 10 in.; length of engine room, 14 ft.; width of engine rooms, 12 ft.

The plans show a boat 75 feet long but before the contract was signed it was decided to build her three frame spaces longer giving her an over-all length of 82 feet. The house, which has been placed on a high coaming so as to keep the entrances above the deck-load of fish, is a new feature in boats of this class, and has been adopted to lessen the danger to the crew in case of fire. A state room is provided for the captain and engineers. There is also a galley and mess room fitted up completely. On the starboard side a toilet is fitted which is flushed from a salt water tank on the roof.

The pilot house is raised 6 feet above the deck and contains steering gear and complete control for the engine. Beneath the pilot house two large fuel tanks are fastened.

There are several features of the construction special to the work that merit description. On account of the shallow draft and the necessity for submerging the propeller the keel was cut off and a wrought iron skeg was fitted. A wooden rudder-post and a wooden rudder have been employed to facilitate handling and steering when towing. The steering gear is of the auto type and is positive all the way through. This made it necessary to fit a spring on each side to take the jar off of the gears. These springs are fitted in pipes along the side of the house. On the starboard side of the engine room is the provision locker, which is double thickness of pine T. & G., and two inches of nonpareil cork board between.

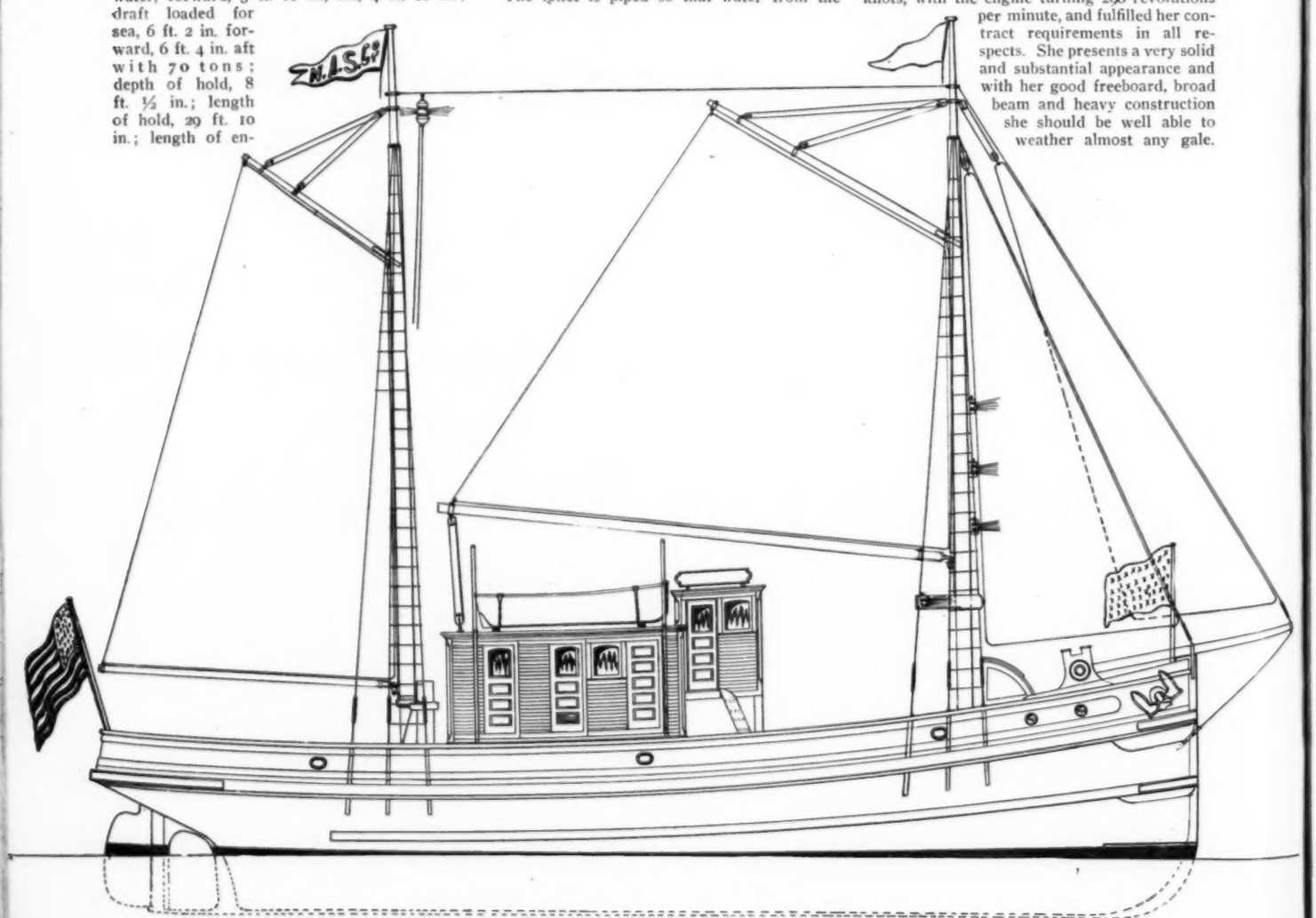
The toilet is piped so that water from the sea is pumped to the tank on the roof of the house, and when it is desired to flush out the system the operator pumps continuously and the excess water flows down through the toilet and waste to the sea. The wash basins in the staterooms are arranged in the same way. The tank on the roof is filled from the tank in the hold by means of the galley pump, and excess water flows to the galley sink so it can be used for washing dishes.

The engine is a four-cylinder 10½ x 10½ Atlas which gives 118 h.p. at 300 revolutions per minute. The anchor windlass was built by the Moore & Scott Iron Works, of San Francisco, to designs by D. W. & R. Z. Dickie and is driven by a shaft from the main engine by belts and friction, arranged to be controlled by a foot lever on the forecastle.

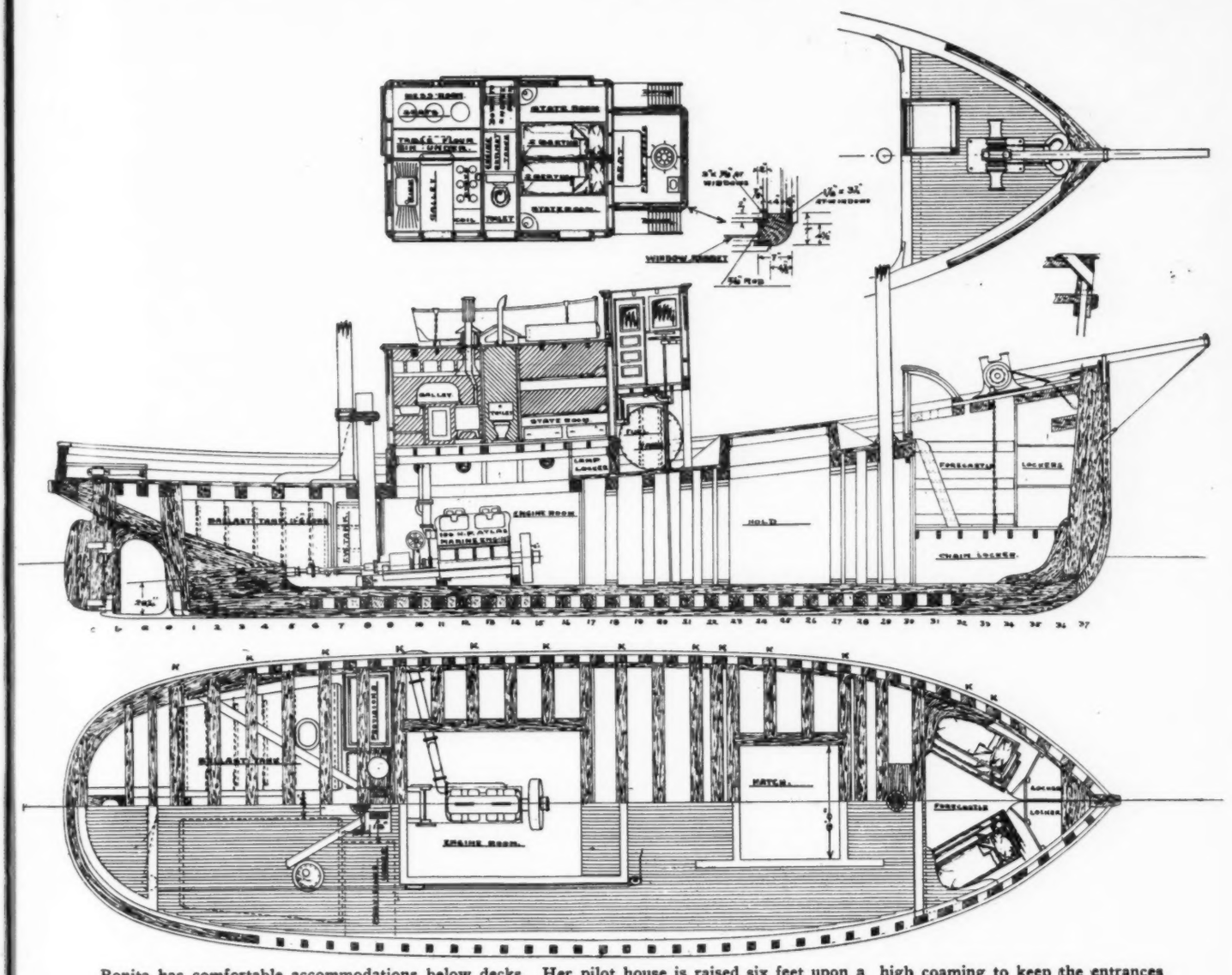
The jib-boom and mainmast are arranged so that they may be taken down when the vessel is on duty at the cannery, leaving her sloop-rigged. The rigging and gear will be oiled and stored for use on the long voyages from the station to the home port and will be used on such trips only.

For the trip to Alaska the little vessel had a 28-foot salmon boat lashed on the after deck and to the deep sea sailor presented a very crowded appearance. It was very puzzling to find a place to stow all the equipment required for a deep sea vessel on a boat that was comfortably loaded with fuel for the trip up, and was carrying also a cargo of powder and carbide.

On a trial trip Bonita made a speed of 6.4 knots, with the engine turning 290 revolutions per minute, and fulfilled her contract requirements in all respects. She presents a very solid and substantial appearance and with her good freeboard, broad beam and heavy construction she should be well able to weather almost any gale.



This latest recruit to the salmon fleets of Alaska is of light draft and can make 6.4 knots in still water.



Bonita has comfortable accommodations below decks. Her pilot house is raised six feet upon a high coaming to keep the entrances above the deck.

A 63-Ft. Flush Deck Yacht.

THE yacht whose plans are shown upon the following page was designed by J. Murray Watts, of Philadelphia, and measures 63 feet over-all, with a 12-foot beam and a draft of 3 feet 6 inches. She shows a departure from the conventional raised deck type of boat, being flush deck from end to end with low cabin houses and a bridge deck amidships.

The trunk above the engine room extends out to the covering board on either side. This gives a good place for the chocks of the boats when the boats are swung inboard, and leaves a clear passageway amidships from the after deck to the bridge deck.

The boat is equipped with two heavy pole masts and can spread a gaff headed trysail on both masts, besides the fore and aft stay sails.

An unusual feature on so small a boat will be the use of a wireless outfit. The antennæ of this outfit will be elevated to a distance of 45 feet above the water line by a special arrangement of a light housing top-mast. The whole gear is so arranged as to be quickly set up or taken down. The owner's business requires him to be constantly in touch with his main office which is also equipped with wireless and can reach him in an emergency at a distance of between one and two hundred miles.

The arrangement below decks is unique in the amount of elbow room it gives to everybody, and the owner's quarters are laid out to give the greatest convenience. There are no passages and every room is accessible from the main lobby, which is also used as a wireless office. There is a large stateroom forward and a toilet-room connecting with this and with the saloon amidships. Aft of the saloon is a roomy galley. The stove pipes from the shipmate range and the fire-place in the main saloon are led up the stack which ventilates both compartments and also holds the compressed air tank for the whistle.

The engine room is unusually large and very well lighted. In it are installed two 4-cycle 25 h.p. engines and a 5 h. p. auxiliary engine driving the dynamo and pumps. This dynamo is rated at 2½ k.w. and provides current for the wireless, for lighting, for charging the storage batteries and running the electric fans in summer. The engine room has a large work-bench with a heavy vise and all necessary tools including a small lathe, so that a thorough repair job can be made on board.

The crew's quarters are aft and give accommodations for four men. As, however, the owner is his own navigator but two men will be carried, the engineer and the cook, which is quite sufficient to handle a boat of this type on short trips, while for ocean racing a couple more can be carried.

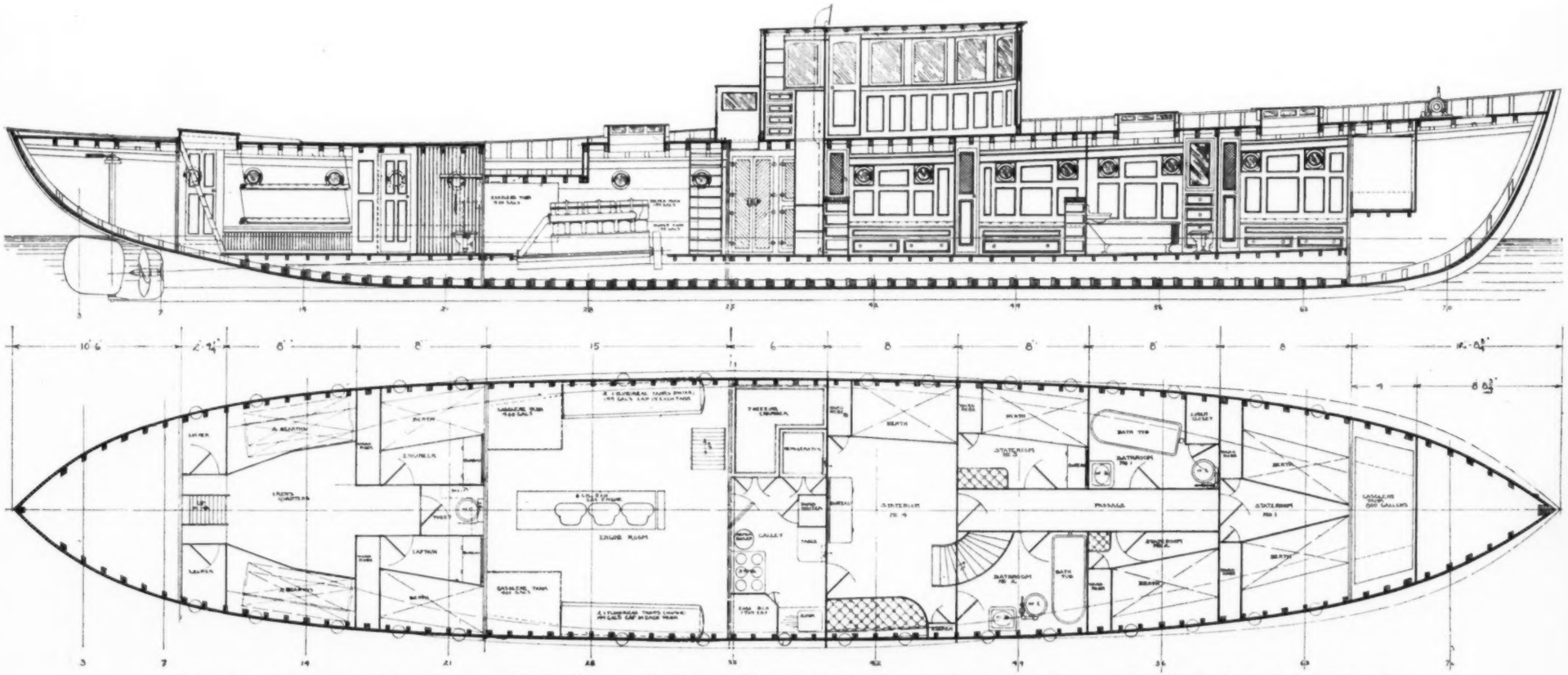
As this boat is designed for use in Chesapeake Bay and southern waters, elaborate precautions are taken to screen out all mosquitoes and other insects, and everything is done to make hot weather pleasant for those on board by means of electric fans, a very large ice chest and refrigerator and also an arrangement in which the drinking water is kept separate from the main water supply and is run through a block tin coil of pipe through crushed ice in the refrigerator.

Though not shown on the plans, an awning will be carried when in tropical waters that will extend from the bridge all the way aft. This awning will be dark green on the lower side to keep out the glare.

The exterior finish of the boat, including cabin sides, covering board and mouldings, is East India teak. The decking is of white pine.

Throughout the plans of the boat, comfort has been the point most sought for. The good freeboard, liberal beam and displacement of this boat enables her to keep at sea where faster, lighter boats would find it very uncomfortable. The boat has a sustained sea speed of 12 knots.

The design by J. Murray Watts shows a departure from the conventional raised deck type. The roofs of the deck houses have been given very little camber, so they are available for deck space. A description of this yacht appears upon page 27.



If the plans of the owner and designer are carried out, Lounger II will leave this summer for a 28-year cruise, so the extreme care in designing is not to be wondered at.

Lounger II, a Novel Craft With Original Features.

LOUNGER II, which was launched at the end of June from the yard of the New York Yacht, Launch & Engine Co., Morris Heights, New York City, her builders, was constructed from the original designs of her owner, James B. Hammond, the president of the Hammond Typewriter Company, and owing to the somewhat novel trip for which she will be used, her interior arrangements are very interesting. She is provided with masts, and a stack amidships, which are not shown in the plans.

The boat is 95 feet over-all with a water-line length of 85 feet 1 inch, a beam of 17 feet and a draft of 4 feet. She is arranged with exceptionally large and comfortable quarters below decks, the owner's quarters being in the forward part and the crew's in the after part. The motor room is a trifle aft of amidships and the power will be provided by a 6-cylinder Twentieth Century motor which, with all sail set, is expected to drive her at about 15 knots.

The deck house is also fitted as a dining saloon and is connected to the galley below by a dumbwaiter. The finish throughout is in mahogany, gold and white, and only woods with the finest grain have been used. A slight change was made in the design whereby an aquarium was substituted for the space occupied by the bathtub upon the starboard side. This is paneled off from the corridor by heavy plate glass, and it is the intention of Mr. Hammond to use the space for keeping fish upon exhibition so that guests may order their own particular brand.

Another novel feature of the boat is a space provided upon the deck for carrying an automobile which may be run aboard, the gunwales of the boat being detachable for this purpose. The car will be used whenever a particularly good road can be distinguished from the bridge. A refrigerating plant is located upon the port side next to the galley, and from this chamber cooled air will be circulated to all parts of the yacht when cruising in tropical waters.

Tanks are provided for carrying 400 gallons of fresh water and 400 gallons of gasoline. A reserve supply of gasoline can also be carried, as it expected that the craft will cross the Atlantic under her own power.

It is Mr. Hammond's intention to cruise in all parts of the world and to live aboard the yacht for a period of 28 years.

An 11-Ton Motor Tender.

COX & STEVENS, of New York City, have recently designed for the George D. Emery Co., of 17 West 42nd St., New York City, the motor tow boat whose plans are shown below. The Emery Co. are large lumber dealers, and this boat has been constructed for the purpose of towing mahogany rafts from the shallower waters in Central America out to the deeper waters where the company's 400-foot steamer takes them aboard.

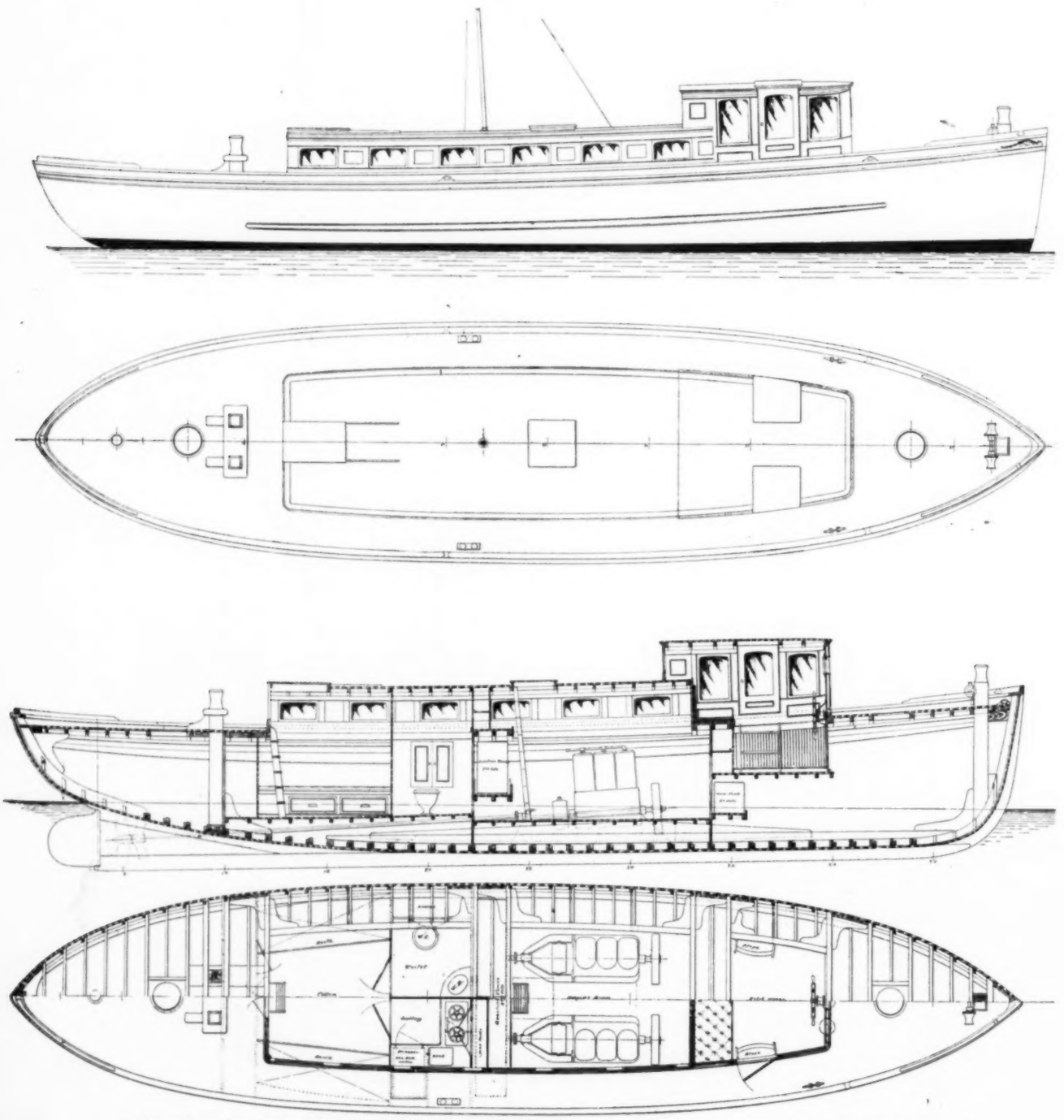
This boat is 50 feet long and weighs eleven tons. An interesting feature of its use is the fact that it is arranged to be hoisted aboard the steamer and carried from port to port when the necessity demands. Cradles are provided by an ingenious arrangement whereby the boat is securely fastened when on the steamer's deck.

The beam of this boat is 11 feet 4 inches, and she is equipped with two 40 h.p. Wolverine motors, which give her a very good speed when not towing too heavy a load. She is capable, however, of doing good service with an almost unlimited weight.

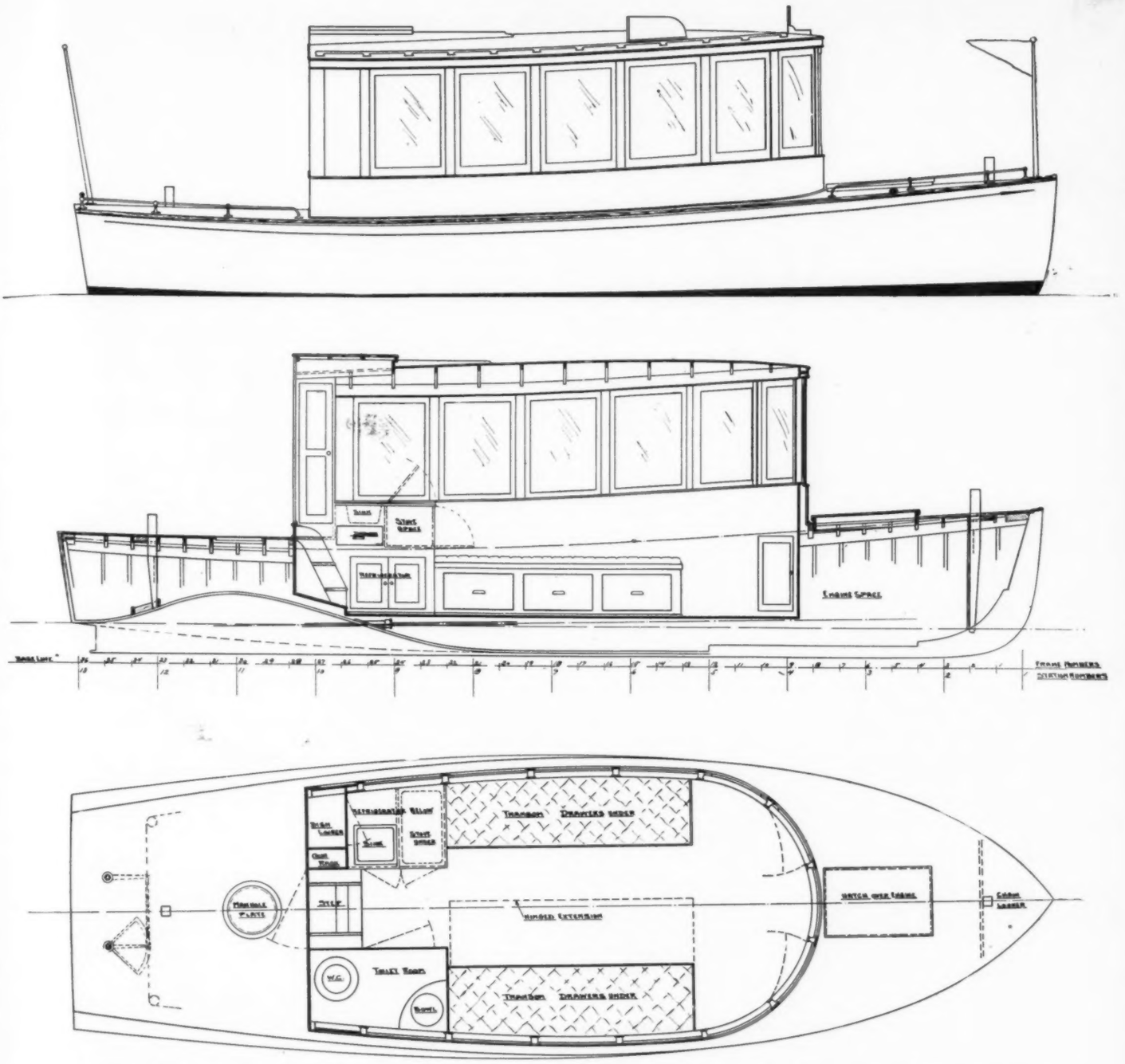
The construction throughout is very heavy and space is left on all sides of the trunk cabin for operating the boat. The gasoline tanks have a capacity of 200 gallons and are located in the after part of the engine room, which is very nearly amidships. Aft of the engine room is a galley upon the starboard side, equipped with a range, sink and icebox, and upon the port side next to the galley is a large toilet equipped with lockers. Both of these rooms are entered from the cabin which is in the after part of the boat.

Sleeping accommodations are provided in the cabin for four people if the upper berths are used. A companion way and hatch afford entrance to this cabin from the after deck. The pilot house is entered by steps from the deck at either side of the vessel and affords space underneath the raised portions for a fresh water tank of 80 gallons' capacity.

A signal mast is set amidships and heavy towing bits are provided, both in the bow and at the stern, made of heavy oak and sunk through into the keel. A large number of windows furnish an abundance of light throughout the length of the trunk cabin.



Although 50 feet long, this tug is arranged to be slung upon the deck of a 400-foot steamer and carried for long distances.



The extreme draft of this craft is only 9 inches and although she will be used principally for day trips, comfortable accommodations for short cruises have been provided.

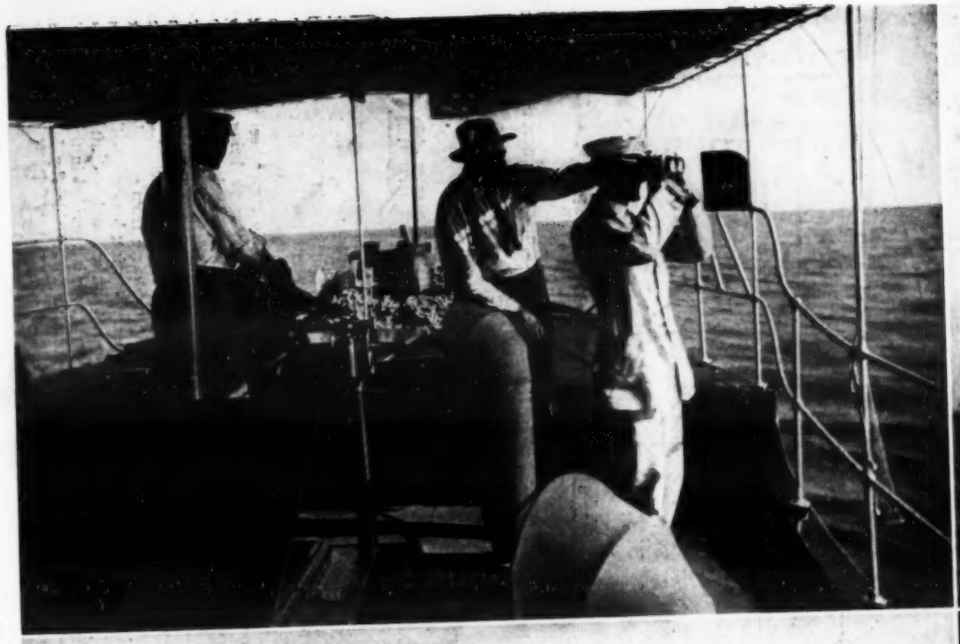
A 25-Foot Tunnel Stern Launch.

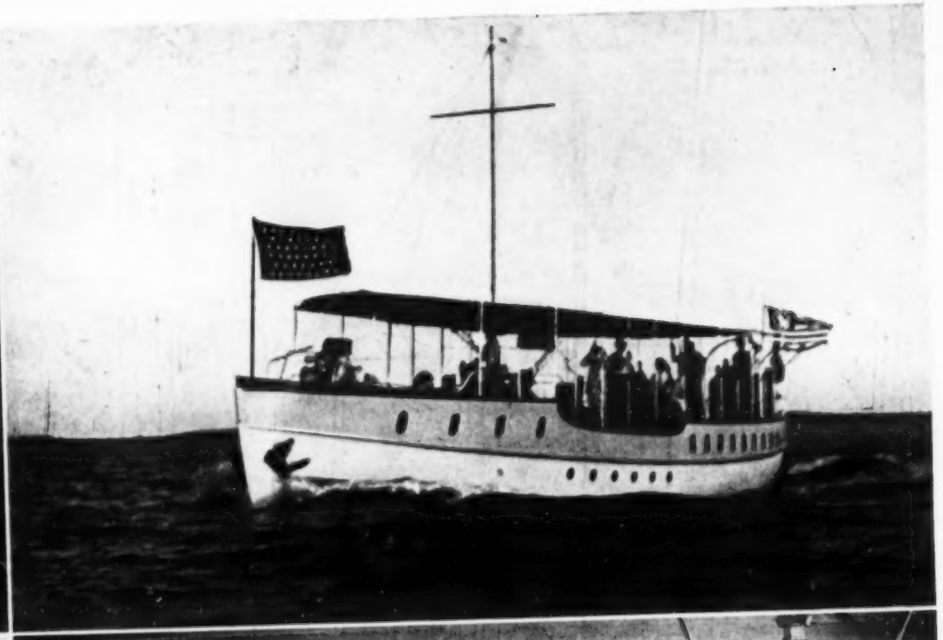
A UNIQUE craft is shown in the accompanying plans from the board of Carlton Wilby, of Detroit. This boat has just been launched, and was built for Mr. Henry Ford, the inventor of the Ford motor car. He expects to use the boat upon the shallow rivers and lakes near his country home. The primary consideration in the construction of this boat was a light draft, and as the plans show, the tunnel stern type was adopted, making the extreme draft only 9 inches. The boat will be used principally for day trips on smooth water, but accommodations have been provided for short cruises when desired. The cabin has transoms on each side, which can be made up into berths, the starboard one being arranged to extend and form a double berth.

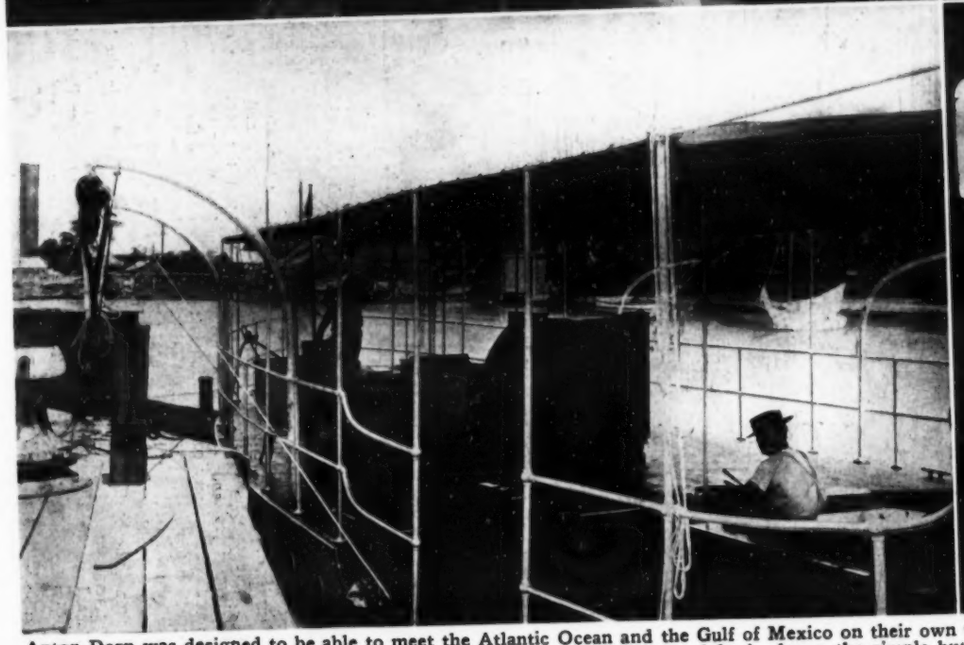
A toilet-room is provided on the starboard side aft, and complete galley arrangements upon the port side opposite. Stowage, fuel and water tanks are located under the after deck, and these can be reached through a manhole plate in the center of the deck. The motor is located in the extreme forward portion of the boat, where it is easily accessible through doors in the bulkhead and through a hatch from the deck. The motor is a 15-20 h.p. 4-cylinder Reynolds.

The cabin work inside and out is finished in mahogany, the work being done by her builders, the Bosserdet Yacht & Engine Co., of Detroit. The hull itself is of original construction designed by Mr. Wilby especially for this type of boat. No center keel is employed, the fore and aft strength being supplied by twin keelsons. These keelsons form the tunnel sides aft and support the engine bed forward, making a very rigid and simple construction with but little weight. The frames are run in one piece from gunwale to gunwale.

The boat is 25 feet long over-all, has a beam of 7 feet, 6 inches, and a draft of 9 inches. Full head room is provided in the cabin which is enclosed upon all sides by large windows.







Anton Dorn was designed to be able to meet the Atlantic Ocean and the Gulf of Mexico on their own terms. Above, at the left, are Capt. Lundbloom at the wheel, Mr. R. L. Peck, the designer, and Dr. Alfred G. Mayer, Director of Marine Biology. Below, at the right, is shown the simple but comfortable interior of the main cabin. You can tell she's a boat, even from the inside.

Anton Dohrn–An Able Cruiser.

A Staunch, 70-Foot, Twin-Screw Motor Yacht for Biological and Botanical Research Work. A Fine Example of Original Designing and Expert Boat Building.

By Richard L. Rinckwitz.

THE Carnegie Institute, of Washington, D. C., has for several years maintained a laboratory in charge of Dr. Alfred G. Mayer, on Loggerhead Key, one of the islansd in the Dry Tortugas group in the Gulf of Mexico, west of Key West, Florida.

The work, carried on by the Department of Marine Biology, of which Dr. Mayer is the director, has for the past six years been performed by the auxiliary ketch rig yacht "Physalia." Desiring to extend their researches to a wider area embracing the Islands of the Bahamas and the West Indies, a larger and more sea-worthy vessel was required, and at the close of the last annual cruise of the "Physalia," the Miami Yacht & Machine Co., of Florida, was commissioned to prepare plans and specifications for a 70-foot twin screw motor yacht that would embody the many special features, which the experience gained in the scientific work of the department had found necessary.

The new yacht is intended for extended cruising in the open waters of the Gulf, and is thoroughly substantial, combining the finish and workmanship of a yacht with the sturdy strength of a commercial vessel. The principal dimensions are as follows: Length overall, 70 feet; length on load water line, 63 feet; extreme beam, 16 feet; beam at water line, 14 feet 10 inches; draft to rabbit, 3 feet 9 inches; extreme draft, 5 feet; freeboard at bow, 7 feet 11 inches; freeboard at stern, 6 feet; least freeboard, 4 feet 7 inches. The displacement is 46 tons with all stores and equipment on board.

The plans show a vessel of the raised deck type, her lines running fair and easy in an unbroken sweep from stem to stern. The hull shows power and sea-going qualities throughout, and is built in the most substantial manner of the best material. All wood is native to this region, as experience has demonstrated that Northern woods do not stand this climate as well.

The keel, deadwoods, keelsons, clamps, carlins, planking, etc., are of select Pensacola pine. The frame, stem and stern of madeira, a wood closely related to the mahogany family and found only on the Florida Keys. All metal fastenings and bolts are of tobin bronze, in the hull proper, and composition spikes.

The vessel is of a symmetrical and well balanced design, and of a build that inspires confidence. The outboard profile shows a well designed flush deck, cruised with the familiar whaleboat or compromise stern, a type which experience has shown to be the best for off-shore work.

Forward the deck extends aft 20 feet, and is slightly raised above the general line of the sheer, the sides of the hull being given a goodly flare forward in order to prevent the seas breaking over her in heavy weather. Immediately aft of the forward deck is a "bridge deck" from which the vessel is controlled. This, contrary to the usual practice, is dropped some two feet below the forward deck, and is 16 feet in length and the full width of the hull. From the bridge deck, and 15 inches higher, extending to the stern, is the after deck, flush the full width of the boat. Frames and planking are carried up to form the sides of the cabin, and a heavy guard rail forms the sheer line of the hull and relieves the monotony of the high freeboard, giving the yacht a pleasing and symmetrical appearance. Above the guard rail large and commodious swinging oval port lights afford light and ventilation to the interior. Under the forward deck is located the crew's quarters, where accommodations are provided for six. Entering from the bridge deck through a sliding hatch, a stateroom opens on either side of a three-foot hall. These are for the captain and chief engineer. Each stateroom contains a raised berth with drawers under, also a dresser and suitable lockers for clothing.

Forward of the stateroom is the forecastle, fitted with pipe berths, and having ample accommodations for four men. Beneath the "bridge deck" is located the engine room. The power plant consists of two 50 h.p. Globe gasoline engines, designed and built by the Pennsylvania Iron Works Co., of Eddystone, Pa. The engine room occupies the entire width of the boat, and is separated from the forecastle and main cabin by two watertight bulkheads. Gasoline to the amount of 1,500 gallons will be carried in heavy copper tanks, giving the yacht an estimated cruising radius of fifteen hundred miles, at a speed of from ten to eleven knots. A feature of the installation is that each engine forms a distinct and separate power unit, each having its own source of fuel supply, electrical equipment and piping, and neither is dependent upon the other. An electric plant also forms part of the regular equipment.

The entrance to the engine room is through a sliding companionway in the after end of a flat top raised hatch, four feet wide by eight feet long, and occupying the center of the bridge deck. This hatch is removable, and allows sufficient space in the deck to remove either one of the engines bodily in case it is found necessary to do so. Thorough ventliation of the engine compartment is obtained by four large hood ventilators, two extending well down to the floor. The hatch over the engine compartment is supplied with large openings, both in sides and top. This, together with the port light in sides of the vessel, supplies plenty of air and illumination.

Immediately aft of the engine compartment, and under the after deck, is located the quarters of the scientific staff, and also the gallery. Entrance is through a raised companionway hatch, covering an opening in the deck, with steps leading to the main cabin. This occupies the entire after end and the full width of the boat, and is 15 feet long. Along both sides and across the after end extends a wide transom berth large enough to accommodate six men in comfort. At the after end of the cabin is a large extension table, so placed that the transom forms a seat on three sides. On the port side of the enrtance, and against the galley bulkhead is a mahogany sideboard. On the starboard side a short passage leads forward to the galley and toilet-room, which occupies the space between the main cabin and the engine compartment. The galley is located on the port side, and occupies a space 10 x 6 feet, and is well equipped with all modern culinary conveniencies and fixtures. The toilet-room is on the starboard side of the galley, and is modern and up-to-date in every respect, with open plumbing.

The cabin is light and well ventilated, a large skylight 3 x 5 feet being placed above the table in the main cabin, while between every alternate frame in the side above the guard are placed large hinged oval lights, measuring 14 inches high by 7 inches wide, thus giving an abundance of light and air, and at the same time affording ample protection in heavy weather.

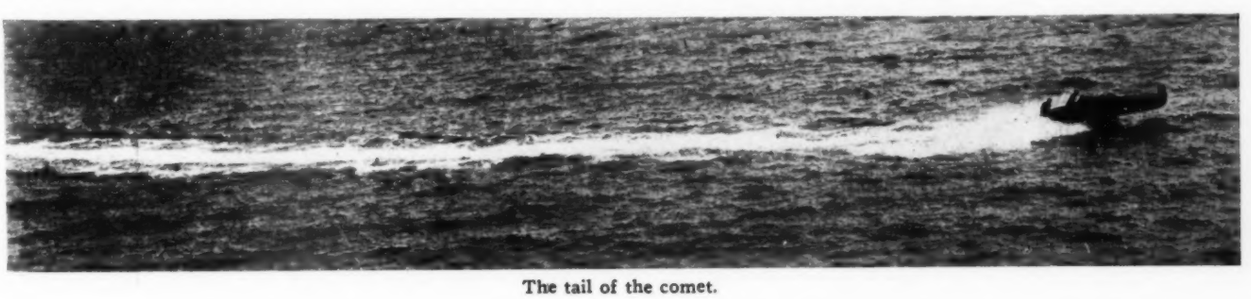
Owing to the fact that the yacht will be used exclusively in tropical waters, no provisions are made for sleeping accommodations below deck for the occupants of the main cabin, except during bad weather. At other times the deck will be used for that purpose, being protected from the heavy dews by an awning that extends over the entire length of the deck.

Fresh water tanks with a capacity of 1,000 gallons are installed under the cabin floor, while a system of piping distributes the water to various parts of the boat.

The yacht is intended primarily for a working vessel, and for that reason the exterior finish is very plain, being finished entirely with paint, with the exception of the companionways, hatches and skylights, which are of mahogany. The deck fittings are of galvanized iron, with the exception of the steering wheel, binnacle and engine room telegraph, which are of polished brass. They are located on the bridge deck just forward of the engine room hatch.

Among the special features of the equipment is a specially designed hoisting outfit operated by a 5 h.p. Regal gasoline marine engine, which will be used for deep sea dredging. The drum carries 3,000 feet of 3/8 inch flexible steel wire cable of high tensile strength, and by its aid examinations of the marine growth on the sea bottom will be carried on. The hoist is installed in a copper lined cockpit in the after deck near the stern, and is protected, when not in use, by a mahogany hatch.

The vessel went into commission July 3d, and was built at a cost of twenty-five thousand dollars. The design was worked out by Mr. R. J. Peck, of the Miami Yacht & Machine Co., aided by Capt. Ivan C. Lundbloom. The latter has for the past six years been sailing master of the ketch Physalia.



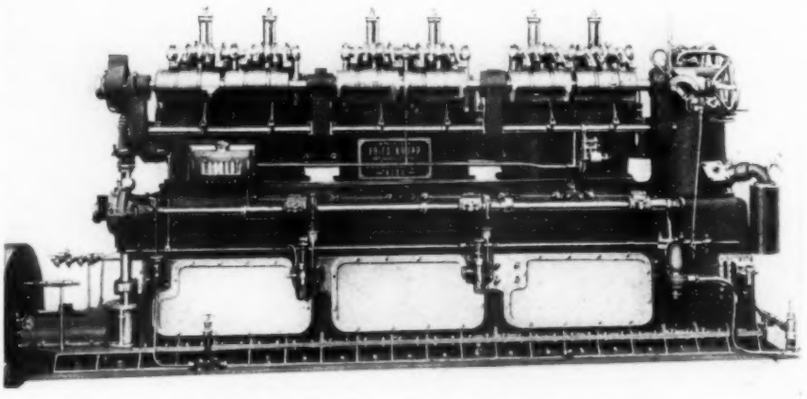
The tail of the comet.

MOTOR BOATING ABROAD

A German Motor Tug.

THE motor tug is becoming popular abroad, even more so than in this country. The one shown to the right is the German boat *Tocopilla* of 50 feet over all, and of 20.7 tons displacement. Her motor shown below is a Krupp-Diesel, using crude oil, which drives her at the rate of 10½ knots, with a towing power of 1200-1300 kilograms at 6½ knots. It is a four-stroke, self-igniting engine, the vaporized oil being fired by the heat generated by compression. Each cylinder is fed by a special fuel pump, a common pump being used, however, to deliver air to the cylinders. Inlet, outlet and fuel valves are actuated by the same cam shaft, a shaft mounted on the opposite side controlling the starting valves only. Starting is effected by means of compressed air stored in steel containers, and a turn of the hand wheel suffices to reverse the engine. With the help of a single lever the r. p. m. can be regulated from 150 to 400. The photograph shows Tocopilla on her trial trip.

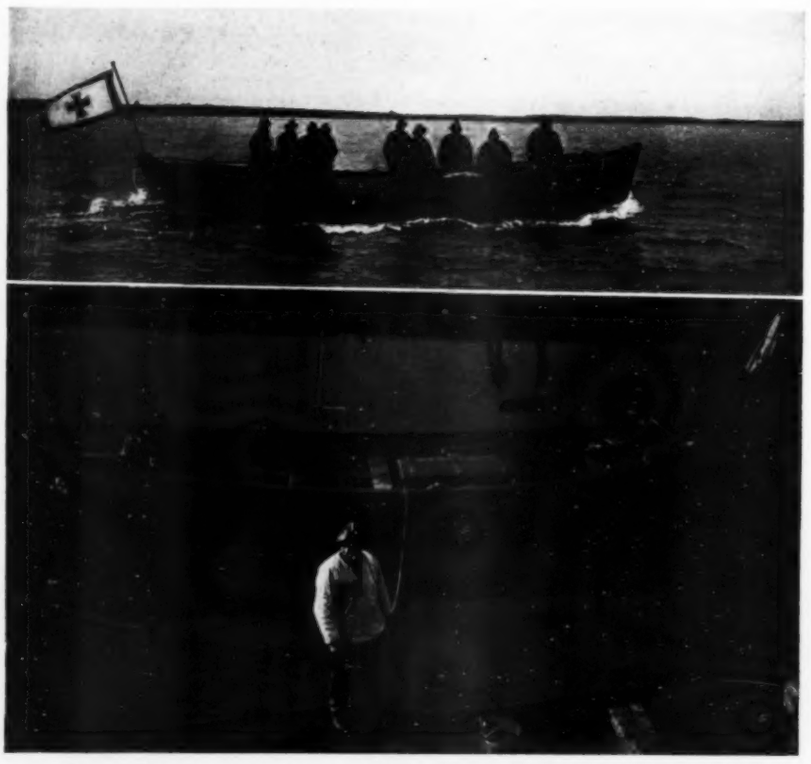
Tocopilla, a twenty-ton German tug boat.



The Krupp-Diesel motor installed in Tocopilla.

Germany's First Gasoline Life Boat

IN reorganizing her life-saving stations on a gasoline basis, Germany has not until very recently, manifested much alacrity, and so far as we know, the life boat illustrated to the right is the first of her type to be built and used in Germany. She was built to the order of the "Deutsche Gesellschaft zur Rettung Schiffsbruechiger" (German Society for the Rescue of the Shipwrecked) and her engine is a 2-cylinder Koerting, which delivers in the neighborhood of 15 h. p. It is installed beneath the trunk shown in the lower photograph. The principal dimensions of the boat are: length over all, 33 feet; beam, 10 feet; and depth, 4 feet.



Germany's first motor life boat. Note the husky crew of salts that man her.

"Semi-Diesel" Engines.

"THE name 'Semi-Diesel'," says our British contemporary, "which for want of a better term is applied to describe the type of engine intermediate between the ordinary petrol or paraffin internal-combustion engine and the Diesel type, in which the compression is so high that no extraneous ignition system is required, is now becoming applicable to a very considerable number of motors, indeed, it is the widely-growing popularity of this type that leads us to refer to the somewhat cumbersome title by which it is at present known.

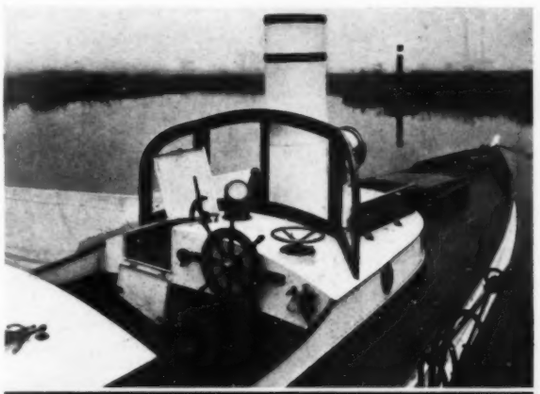
The Diesel engine, by reason of the amount of accessory gear required, such as air bottles, compressors, etc., is cumbersome in small powers and very expensive in first cost, and it is only in sizes over about 250 h. p. that its great economy in consumption balances its high first cost, etc. In all powers ranging from four figures upwards, it is hardly possible to question the supremacy of the Diesel engine, but for the present we are concerned with engines of smaller size, and here it seems to us that the semi-Diesel type is destined to fill the undoubtedly large gap that exists between the size where the ordinary petrol or paraffin engine becomes uneconomical on account of its expensive fuel and the point where the Diesel becomes practicable. There is at the present time a rapidly growing demand for 50 h. p. up to 250 h. p., or so for heavy duty work for which the slow-running semi-Diesel engine is admirably suited, as for example, for installation in lighters, small cargo boats, the semi-Diesel engine is proving itself extremely flexible compared with some of the earlier hot-bulb types, and appears to be an efficient motor for all practical purposes.

Roland--Her Unique Power Plant.

ROLAND is an interesting boat in more ways than one, but principally so because of her unique power plant. Built recently in Hamburg, her metric measurements approximately converted are: 55 feet 9 inches over-all, 9 feet 11 inches beam and 3 feet 3 inches draft. Her hull is of oak, built on the diagonal Carvel system and copper riveted throughout. Two water-tight steel bulkheads provide the requisite transverse stiffening, and also serve to isolate the engine room from the forecastle and living quarters. Galvanized angle steel is used for the framing forward, natural oak crooks being used elsewhere. The deck beams are of pitch pine, and the decks are of Oregon pine and mahogany.

It will be seen by the lower photograph that the boat is controlled from a sunken bridge deck or cockpit between the engine room trunk and that over the living quarters. The steersman's position is therefore in easy communication with the engine room and is protected by a glass wind shield also shown in the picture. The forecastle is reached through a hatch on the forward deck, and contains folding bunks and lockers for three men. The engine room is reached through the hatch with hinged covers shown at the left of the steering wheel in the photograph at the top of the page.

The most interesting feature of Roland is her unique power plant, which consists of a 40 h.p. Daimler motor, an electric generator which may also be used as a motor, and a storage battery. The gasoline motor and the generator are mounted on the same steel base and are connected by means of an electro-magnetic clutch. On the after side of the generator there is a second clutch, which transmits the power to the propeller shaft, and is provided with a ball-bearing thrust block. Under the cockpit floor there is a storage battery of 40 cells, with a 90-ampere capacity and connected in parallel with the generator, by which it is charged and for which it supplies current when used as a motor. With this arrangement several distinct combinations are possible; the engine may be used alone, driving the propeller shaft by means of the clutches, the armature of the generator revolving as a flywheel. A second method is by the electric motor, and a third possibility is what might be called a "mixed drive," using both the gasoline engine and the electric motor, both clutches being engaged. Reversing is accomplished by declutching the propeller shaft, changing the direction of the current to the motor and reversing the ignition of the gasoline engine. These three operations are accomplished by means of a hand wheel.



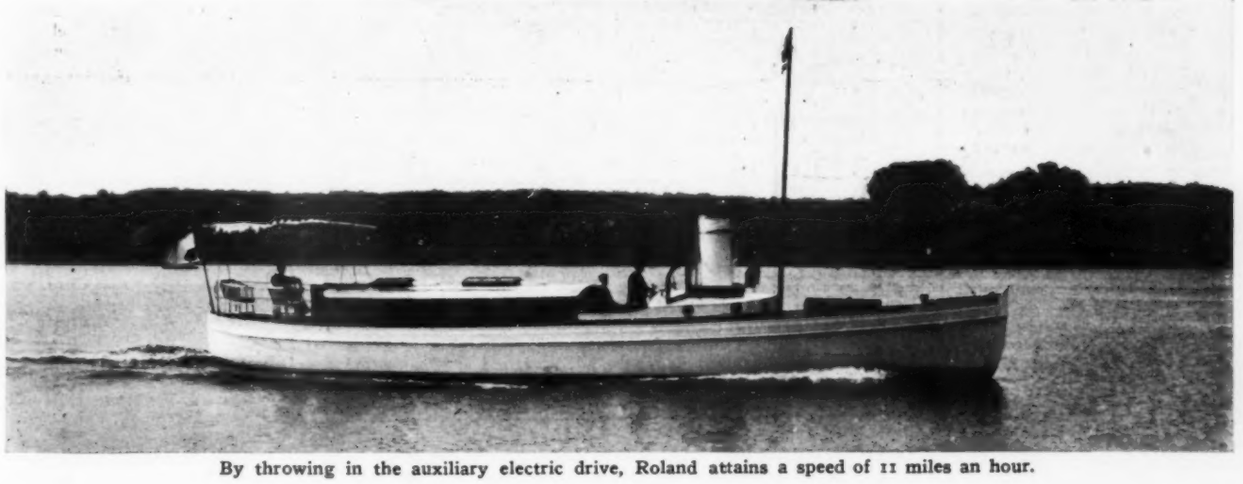
The interesting arrangement of the steering and controlling devices and two views of the interior.

It is possible to run the boat at the rate of six miles an hour for three hours on the battery, and with the mixed propulsion a speed of eleven miles an hour is obtainable, a valuable asset when bucking strong tides or head winds.

Some idea of the finish and layout of Roland's interior may be obtained from the two photographs at the left. The first one shows the full width stateroom which occupies the forward part of the cabin-trunk. It is provided with a large berth on either side, with a washstand and mirror at the forward end, and a large locker on the after bulkhead. Just aft of this compartment on the port side is a large, well equipped toilet-room, with folding lavatory. Occupying the corresponding space on the starboard side of the passageway is a sort of buffet galley, which serves its purpose admirably, as the boat is to be used merely for estuary cruising. The main cabin occupies the rest of the space beneath the cabin-trunk, which amounts approximately to one-half. As will be seen by the interior views, there is a large cushioned transom along either side of this compartment, both being available as berths when required. The two after corners of this cabin are devoted to lockers and in the forward ones are built stationary tables with lockers beneath.

The companionway leads from the after end of the main cabin to the flush after deck, which is large enough to accommodate a number of wicker chairs, and is protected by a folding awning. Runways at either side of the cabin-trunk connect this deck with the steersman's cockpit and forward deck, the latter being plenty large enough for the easy handling of lines and ground tackle.

A mast, which may be unshipped, is stepped just forward of the trunk over the engine room, and with the stack above the latter makes a rather awkward combination. The stack is, of course, essential as a means of ventilating the engine room, but if the signal mast were stepped about amidships on the cabin-trunk, we believe a much more pleasing effect would be obtained. However, our standards of the æsthetic are not infallible.



By throwing in the auxiliary electric drive, Roland attains a speed of 11 miles an hour.

Preparing for a Long Distance Race.

Some of the Calculations That Should be Made Before Starting on a Race or Cruise. With Curves and Other Data Obtained From the Conditions on the Hudson River.

By C. F. Chapman.

GENERALLY, weeks are spent preparing every detail of the engine for a race and the equipment is inspected with the utmost thoroughness so that nothing can go wrong after the starting gun is fired. The hull is hauled out and every trace of growth which might tend to reduce the speed a fraction of a knot is removed. Yet the captain probably knows little of courses he is to take even if he has a compass on board. The condition of the tides during the race has not entered his head, nor has he studied out how best to take advantage of the current and the eddies, but nevertheless these little details may win or lose the race for him and no pains should be spared in getting together every bit of information possible before the start and putting it into such shape that it can be readily referred to during the race.

A typical example of the amount of data which should be prepared for a long distance race is shown on the following curves and tables which were prepared for the race from New York City to Albany and return, a distance of 235 nautical miles. Much of this data is of permanent value to any one planning a race or cruise on the Hudson.

As the time of high and low tide is different at every point on the course, these should be carefully worked out before the start. The government tide tables give the tidal difference from some point of reference to all important points in the vicinity. For New York City and the Hudson River this point of reference is Governor's Island. Curve (1) on Fig. 1 shows how much later it is high and low water respectively at points up the river. It is interesting to note that the lag of the tide varies uniformly with the distance from the Battery for the first 100 miles, at the rate of about one hour for every 12 to 15 miles. From Catskill North, this lag increases until there is a difference of an hour in 7½ miles. High and low tides do not occur at equal intervals from similar conditions at Governor's Island, that is, high tide at Albany occurs about 10 hours after high water at New York, while low tide does not occur until 11 hours after low water at New York.

Curve (2) on Fig. 1 shows the average amount that the tide rises and falls at any point on the river. This can be plotted from data found also in the government tide tables and shows some interesting characteristics of the tides. For instance, the rise and fall gradually diminishes from the Battery, where it is 4.4 feet, to 2.6 feet at Newburg. From Newburg north the rise increases again until we reach Catskill, where it is 4.2 feet, and then drops off rapidly as Albany is approached, where the average rise and fall is only 2.4 feet.

Another important fact to know about the tides in the Hudson River is that the current does not change at the same time that the tides do. For example, at the Battery, New York, the current does not begin to run north until 3 hours after low tide, neither does it begin to run south until 2 hours after high water. This lag of the current gradually diminishes as we go further north and the time that the current changes approaches the time that the tide turns. The current turns close to either shore fully one hour before it does in the middle of the river, or in other words, the current continues to run in a given direction for fully an hour later in the channel than it does in the shallow parts of the river.

From these curves and knowing the time of high and low water at Governor's Island, it is possible to make such a chart as shown on page 37. This shows the condition of the tides and current at all points and at all times during the race.

Knowing the speed of a boat and the strength of the current at the various points, the boat's position at any time can be determined. A curve drawn through these points will show the boat's position at any time on a trip from New York to Albany and return, the condition of the tides and currents at each position and the speed she should be making. The curves show at a glance the duration of ebb and flood tide and how fast a boat must go to carry a fair tide from New York to Albany. The most advantageous time to start from any point to carry the current for the longest time is also easily determined. It is possible to draw such a chart for any body of water and covering any period of time. When on a cruise such a chart should be of value to show the most advantageous times for being under way and at anchor and when care should be taken in entering ports at low tide.

The chart courses should always be worked out for the full length of every long distance race. This should be done no matter how far inland the course is nor how narrow the river may be, for one can never tell when fog is coming, and then being without the courses means the loss of the race. No better illustration can be had of this than the 1910 "New York-Albany Race," when fog shut down on the twelve contestants about 2 A. M. when most of them were crossing Newburg Bay. Eleven out of the twelve went aground and lost from two to eight hours each.

A convenient way of arranging the courses is shown in Table I for the Hudson River, New York to Albany and return. The least draft at any point on that particular course is shown, as is also the draft at the point where the course is changed to the next one. The last column shows the length of each course in statute miles and by the use of Table VI the time that each course should be held is indicated for speed from 6 to 9½ miles per hour. Corrections, of course, must be made for tidal effects shown on curve sheet 3.

In order to make Table VI of the most value a curve showing the various boat speeds for different engine revolutions should be computed. This can easily be done by putting the boat over a course of known length several times, both with and against the tide, and different revolutions of the engine. One point which should be remembered when putting a boat over a course, both with and against the tide, to get her average speed, is to take the average of her speeds in each direction and not the average computed from the sum of the two times. This latter method is very much in error if the velocity of the current is very great.

A valuable addition to Table I would be another column for the compass courses, that is, as practically every compass has some error this additional column should be for the courses that would be indicated by the compass in question, allowing for its error on the courses shown in the column headed "Chart Courses."

The compass error is a very serious matter, but it can be easily detected by putting the boat over a number of known courses in order to see how the compass bearings compare with the chart courses. These known courses should be nearly as possible in the same general direction as the courses to be corrected, as the error is very likely to be quite different for the different courses. A typical error is shown in Table II and one will see at once that such an error would very likely prove disastrous if it were not known when trying to steer a compass course. Table IV might be used in conjunction with Table VI without the addition of the extra column, but this would not be as convenient.

Tables III and IV show a list of the lights, fog signals, buoys, etc., that one who attempts to navigate the Hudson at night or in a fog should know. A knowledge of these is also useful for day sailing, as they generally mark channels or obstructions of some kind.

Table V should be of value, as it shows in statute miles the distances from all important points to all other important points on the Hudson River.

Another very interesting and useful map of the river can be made from the government topographical maps mounted in a convenient form for use on board. While these do not give the necessary information as to depth of water, buoys, etc., yet they give much which is not given on the government charts and they can be used most advantageously in conjunction with the charts.

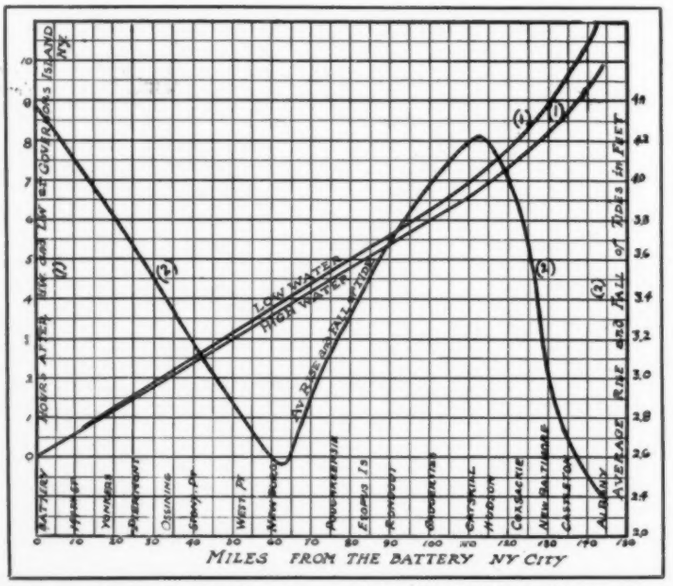


Fig. 1.—Curve (1) showing how much later it is high and low water at points on the Hudson River than it is as Governor's Island. Curve (2) showing the average amount in feet that the tide rises and falls.

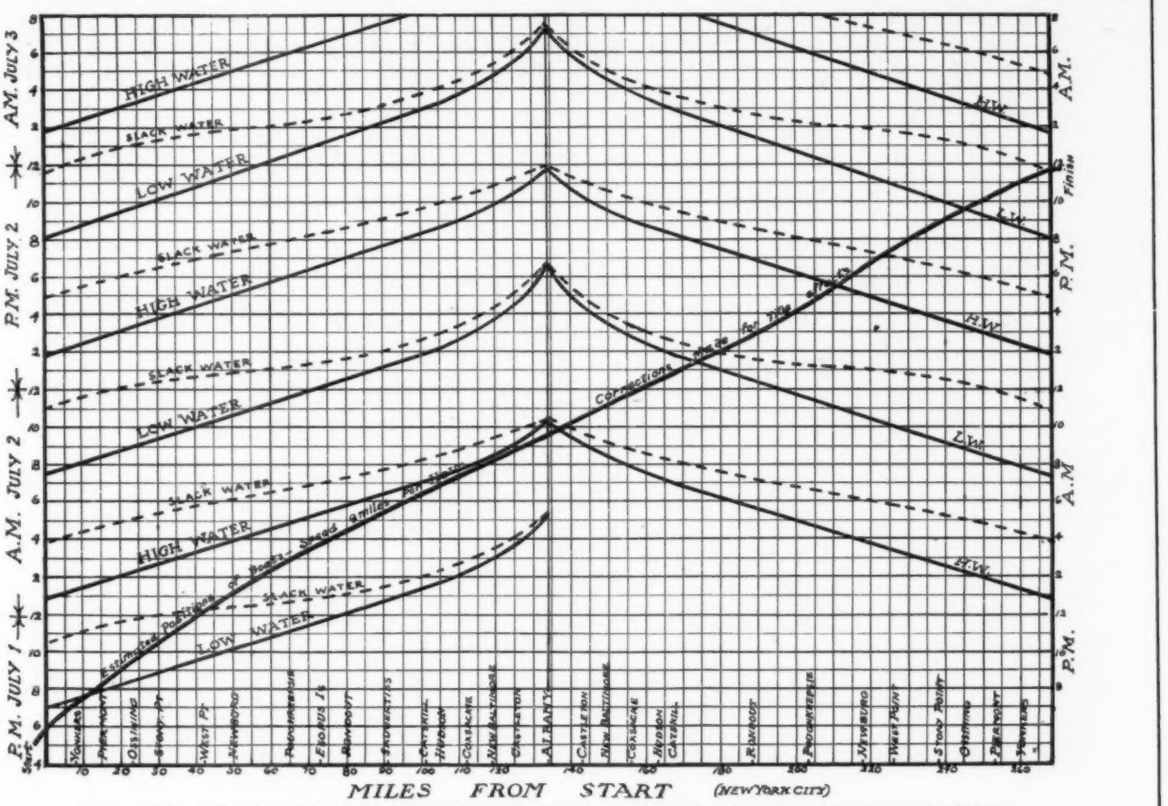


Fig. 2.—Chart showing the conditions of the tides and currents at all points from New York to Albany and at all times during the New York-Albany Race.

Table I.—Hudson River Courses for Motor Boats.

Up River.

From.	To.	Chart Course.	Least Depth.	Depth at Turn.	Distance.
W. 147th St.	Sneden's Ldg.	N. N. E. ¼ E.	15	29	13
Sneden's Ldg.	Rockland Lt.	N. ¾ E.	9	30	9½
Rockland Lt.	Verplank Pt.	N. by W. ½ W.	13	50	8½
Verplank Pt.	Donderberg	N. E. by N. ¼ N.	28	85	2½
Donderberg	Anthony's Nose	N. W. by N. ¼ N.	40	126	2¾
Anthony's Nose	Con Hook	N. E. ½ N.	60	125	2⅜
Con Hook	Sugar Loaf	N. ¾ E.	90	90	0¾
Sugar Loaf	Gees Pt.	N. N. E. ¼ E.	50	70	2⅜
Gees Pt.	Magazine Pt.	N. W.	70	140	0⅞
Magazine Pt.	Plum Pt.	N. by W. ¼ W.	30	30	4⅜
Plum Point	Red Spar No. 6.	N. by E. ¼ E.	25	35	5⅜
Red Spar No. 6	¼ mi. north of Dammerskamer Pt.	N. E. ½ N.	25	75	3
¼ mi. north of Dammerskamer Pt.	Poughkeepsie Bridge	N. N. E. ⅝ N.	45	55	9¼
Poughk. Bridge	½ mi. north Crum Elbow	N. ⅞ E.	49	97	3⅜
½ mi. north of Crum Elbow.	¼ mi. south of Greer Pt.	N. N. W. ¼ N.	97	113	0¾
¼ mi. S. Greer Point.	North End Esopus Island	N. by E. ¼ E.	45	48	4¼
N. end Esopus Isl.	Opp. Staatsburg	N. ⅜ E.	40	85	1¼
Opp Staatsburg	Esopus Light	N. N. E. ¼ N.	30	40	1½
Esopus Light	Opp. Pt. Ewen	N. by W.	29	51	2¾
Opp. Pt. Ewen.	Kingston Pt.	N. N. E. ½ N.	27	27	1¾
Kingston Pt.	Livingston Isl.	N. N. E. ¼ E.	20	40	6
Livingston Isl.	Cruger Island	North	25	45	1⅛
Cruger Island	Saugerties Buoy	N. by E. ½ E.	25	54	2⅝
Saugerties Buoy	Malden	N. ½ E.	40	40	1¾
Malden	Smiths Ldg.	N. E. by N. ⅜ N.	35	50	3
Smiths Ldg.	Upper Coal Bds. B'y	N. E. ½ N.	25	25	0⅝
Upp. Coal Bds. Buoy	Oak Hill Ldg.	N. E.	22	26	4¼
Oak Hill Ldg.	S. of Catskill Pr.	N. E. by N.	26	52	0¾
S. of Catskill Pr.	Red Spar Buoy No. 14	N. by E.	46	57	0½
Red Buoy No. 14	Lt. "W" Flat	N. ¾ W.	52	52	0⅜
Lt. "W" Flat	Red Buoy No. 16	N. N. E.	40	40	1⅛
Red Buoy No. 16	W. of Hudson Lt.	E. N. E. ¼ N.	19	19	2½
W. of Hudson Lt.	Athens	N. E. ¼ N.	19	23	0½
Athens	N. Athens	N. N. E. ½ E.	19	19	0⅝
N. Athens	W. of Red Lt.	N. E. ¼ N.	17	17	0⅞
W. of Red Lt.	W. of Spar	N. E. by N. ¼ N.	20	20	0¼
W. of Spar	Lt. W. Flats	N. E. ¼ N.	15	28	0¾
Lt. W. Flats	4 Mile Pt. Lt.	N. by E. ¾ E.	25	40	1.0
4 Mile Pt. Lt.	Fitch Wharf Lt.	N. ⅝ E.	12	30	2.0
Fitch Wharf Lt.	Coxsackie	N.	26	39	1¼
Coxsackie	White Lt.	N. ½ E.	12	40	2.0
White Lt.	Red Lt.	N. N. E. ⅜ E.	11	12	2⅜
Red Lt.	White Lt.	N. by E. ⅜ E.	15	20	0⅝
White Light	New Baltimore	N. ⅛ E.	12	20	1⅜
New Baltimore	Five Hook Lt.	N. by E. ½ E.	10	12	1⅛
Five Hook Lt.	White Light	N. ¼ W.	12	12	1⅛
White Light	Mull Dike Wt. Lt.	N. N. E. ½ E.	11	12	1½
Mull Dike Wt. Lt.	Red Light	N. E. ⅜ N.	7	13	1½
Red Lt.	Cow Is. Red Lt.	N. N. E. ½ E.	11	18	1⅜
Cow Is. Red Lt.	White Light	N. by E. ⅜ E.	11	14	1⅜
White Light	Staat Pt.	N. N. E.	12	18	1⅛
Staat Pt.	S. of Beacon Pt.	N. ½ W.	8	13	1⅜
S. of Beacon Pt.	Cabbage Is.	N. ¾ E.	7	14	1.0
Cabbage Is.	Cuyler Dike Red Lt.	N. N. E. ¾ E.	9	12	1⅛
Cuyler Dike Red Lt.	S. Albany	N. N. E.	11	16	0⅜
S. Albany	R. R. Bridge	N. E. by N. ¼ N.	8	12	0¾

Down River.

From.	To.	Chart Course.	Least Depth.	Depth at Turn.	Distance.
R. R. Bridge	S. Albany	S. W. by S. ¼ S.	8	16	¾
S. Albany	Cuyler Dike Red Light	S. S. W.	11	12	⅜
Cuyler Dike R. Lt.	Cabbage Is.	S. S. W. ¾ W.	9	14	1¼
Cabbage Is.	S. of Beacon Is.	S. ¾ W.	7	13	1
S. of Beacon Pt.	Staat Pt.	S. ½ E.	8	18	1⅜
Staat Pt.	White Lt.	S. S. W.	12	14	1⅛
White Lt.	Cow Is. Red Lt.	S. by W. ¾ W.	11	18	1⅜
Cow Is. Red Lt.	Red Lt.	S. S. W. ½ W.	11	13	1⅜
Red Lt.	Mull Dike W. Lt.	S. W. ⅛ S.	7	12	1½
Mull Dike W. Lt.	White Lt.	S. S. W. ½ W.	11	12	1½
White Lt.	Five Hook Lt.	S. ¼ E.	12	12	1⅛
Five Hook Lt.	N. Baltimore	S. by W. ½ W.	10	20	1⅛
N. Baltimore	White Light	S. ⅛ W.	12	20	1¾
White Lt.	Red Lt.	S. by W. ¾ W.	15	12	⅜
Red Lt.	White Lt.	S. S. W. ⅞ W.	11	40	2⅜
White Lt.	Coxsackie	S. ½ W.	12	39	2
Coxsackie	Fitch Wharf Lt.	S.	26	30	1¼
Fitch Wharf Lt.	4 Mi. Pt. Lt.	S. ⅝ W.	12	40	2
4 Mi. Pt. Lt.	Lt. W. Flats	S. by W. ¾ W.	25	28	1
Lt. W. Flats	W. of Spar	S. W. ¼ S.	15	20	¾
W. of Spar	W. of Red Lt.	S. W. by S. ¼ S.	20	17	¼
W. of Red Lt.	N. Athens	S. W. ¼ S.	17	19	⅞
N. Athens	Athens	S. S. W. ½ W.	19	23	⅜
Athens	W. of Hudson Lt.	S. W. ½ S.	19	19	½
W. of Hudson Lt.	Red Spar No. 16	W. S. W. ¼ S.	19	40	2½
Red Spar No. 16	Lt. W. Flats	S. S. W.	40	52	1⅛
Lt. W. Flats	Red Spar No. 14	S. ¾ E.	52	57	⅜
Red Spar No. 14	S. of Catskill Pier	S. by W.	46	52	½
S. of Catskill P.	Oak Hill Ldg.	S. W. by S.	26	26	¾
Oak Hill Ldg.	Upper Coal Beds	S. W.	22	25	4¼
Upper Coal Beds B.	Smiths Ldg.	S. W. ½ S.	25	50	⅝
Smiths Ldg.	Malden	S. W. by S. ⅛ S.	35	40	3
Malden	Saugerties By.	S. ½ W.	40	54	1¾
Saugerties By.	Cruger Is.	S. by W. ½ W.	25	45	2¾
Cruger Is.	Livingston Is.	S.	25	40	1⅛
Livingston Is.	Kingston Pt.	S. S. W. ¼ W.	20	27	6
Kingston Pt.	Opp. Pt. Ewen	S. S. W. ½ S.	27	51	1¾
Opp. Pt. Ewen	Esopus Lt.	S. by E.	29	40	2¾
Esopus Lt.	Opp. Staatsburg	S.S. W. ¼ S.	30	85	1½
Opp. Staatsburg	N. end Esopus Is.	S. ¾ W.	40	48	1¼
N. end Esopus Is.	¼ Mi. S. Greer Pt.	S. by W. ¼ W.	45	113	4¼
¼ Mi. S. Greer Pt.	½ Mi. N. Crum Elbow	S. S. E. ¼ S.	97	97	¾
½ Mi. N. Crum Elbow	Poughkeepsie Br.	S. ⅞ W.	49	55	3⅜
Poughkeepsie Br.	¼ Mi. N. Dammerskamer	S. S. W. ⅜ S.	45	75	9¼
¼ Mi. N. Dammerskammer	Red Spar No. 6	S. W. ½ S.	25	35	3
Red Spar No. 6	Plum Pt.	S. by W. ¼ W.	25	30	5⅜
Plum Pt.	Magazine Pt.	S. by E. ¼ E.	30	140	4⅜
Magazine Pt.	Gees Pt.	S. E.	70	70	⅞
Gees Pt.	Sugar Loaf	S. S. W. ¼ W.	50	90	2⅜
Sugar Loaf	Con Hook	S. ¾ W.	90	125	¾
Con Hook	Anthony's Nose	S. W. ½ S.	60	126	2⅜
Anthony's Nose	Donderberg	S. E. by S. ¼ S.	40	85	2¾
Donderberg	Verplank	S. W. by S. ¼ S.	28	50	2½
Verplank	Rockland Lt.	S. by E. ½ E.	13	30	8½
Rockland Lt.	Snedens Ldg.	S. ¾ W.	9	29	9½
Snedens Ldg.	W. 147th St.	S. S. W. ¼ W.	15		13

Table II.
Showing Typical Compass Error.

Chart Course.	Compass Course.	Deviation.
N by W	N ¾ E	1.75 E
N	N N E ½ N	1.5 E
N by E	N N E ½ E	1.5 E
N N E	N E ¾ N	1.25 E.
N E by N	N E ¼ E	1.25 E.
E	N E 1-10 S	.10 S
E S E	E S E ½ E	.5 E
S by E	S S E	1.0 E
S	S by E	1.0 E
S by W	S ⅛ E	1.12 E
S S W	S ¾ W	1.25 E
S W by S	S S W	1.0 E
W	W by N	1.0 N
W N W	N W ¾ W	1.25 N

Table III.
List of Lights from New York to Albany.

Name.	Light	Description.	Fog Signal.
Jeffreys Hook	2 Fixed Red	Red post, lanterns vertically	
Tarrytown	Flashing Red	Red, conical tower	Bell
Rockland Lake	Fixed White with eclipse	Brown and white tower	Bell
Stony Pt. Upper	Fixed White	White tower	
Stony Pt. Lower	Fixed Red	White fog-bell tower with lantern	Bell
Iona Island	Fixed White	Black Post	
Con Hook	Fixed White	Black Post	
West Point	Fixed White	White tower	Bell
Danskammer	Fixed White	White wooden tower	Bell
Esopus Island	2 Fixed Red	Red Post, lanterns vertically	
Esopus Meadows	Fixed White	White tower	Bell
Rondout	Fixed White	Square granite tower	
Rondout So. Dike	Fixed White	Black Post	
Rondout No. Dike End	Fixed Red	Red Post	
Rondout No. Dike Middle	Fixed Red	Red Post	
Saugerties So. Dike	Fixed Red	Red Post	
Saugerties	Fixed White	Square brick tower	Bell
Green Flats	Fixed Red	Red Pile Dolphin	
Upper Coal Beds	Fixed White / Fixed Red	Black Crib	
Livingston Creek	Fixed Red	Red structure on crib	
Catskill W. Flat	Fixed White	Lamphouses on black crib	
Percy Reach	Fixed White	Black structure on crib	
Hudson City	Fixed White	Red tower	Bell
Priming Hook	Fixed Red	Red 4-Pile Dolphin with crane	
West Flats	Fixed White	Black, post on crib	
Four Mile Point	Fixed White	Brown tower	
Lamphere Dock (Narrow Channel)	Fixed White	Black structure on brick base	
Stockport	Fixed White	Black Dolphin	
Fitchs Wharf	Fixed White	Black post on wharf	
Coxsackie E. Flats	Fixed Red	Red Dolphin	
Coxsackie	Fixed White	White tower	
Stuyvesant	Fixed Red	Red Square tower	
Stonehouse Bar	Fixed White	Black Dolphin	
New Baltimore Rock	Fixed White	Black Dolphin	
New Baltimore	Fixed Red	Red, post with oilhouse on crib	
Five-Hook Is.	Fixed Red	Red, post on crib	
Coeyman Bar	Fixed White	Black, post on crib	
Roha Hook	Fixed White	Black, post on crib	
Mull Dike Lower End	Fixed White	Black, 4-pile Dolphin	
Mull Dike Upper End	Fixed White	Black, post on crib	
9-Mile Tree	Fixed Red	Red, post on crib	
Cow Island	Fixed Red	Red, post on crib	
Bear Island	Fixed White	Black, post on crib	
Staat Point	Fixed Red	Red post	
Van Wies Point	Fixed White	White, stone, black crane	
Cross Over	Fixed White	Black, post on crib	
Cuyler Dike	Fixed Red	Red, post on crib	

Table IV.
List of Buoys from New York to Albany.

Name.	No.	Description.	Depth at Low Water.
Piermont Pier	½	Black Spar	25
Tappan Zee	1 / TZ	Black Spar	10
Tappan Zee	3 / TZ	Black Spar	13
Tarrytown Flats	2	Red Spar	10
Con Hook Rocks	1	Black Spar	9
The Brothers	4	Red Spar	10
Low Point	6	Red Spar	10
Diamond Reef	—	Red and Black Spar	7
Hen and Chickens	—	Red and Black Spar	8
Plawchy Flats South	8	Red Spar	10
Plawchy Flats North	10	Red Spar	8
Flatbush Flats Lower End	—	Red and Black Spar	12
Flatbush Flats Upper End	—	Red and Black Spar	10
Barrytown Flats	—	Red and Black Spar	12
Saddlebags	3	Black Spar	7
Saugerties	5	Black Spar	12
Lower Coal Beds	12	Red Spar	11
Duck Cove Flats	—	Red and Black Spar	11
Rodgers Is. Flats Lower End	14	Red Spar	7
Rodgers Is. Flats Upper End	16	Red Spar	8
Hudson Middle Ground Upper End		Red and Black Spar	12
Four Mile Point Flats Lower	18	Red Spar	8
Four Mile Point Flats Upper	20	Red Spar	12
Coxsackie Is. Shoal	7	Black Spar	9
Kinderhook Flats	22	Red Spar	8
Hotaling Is. Schoal	24	Red Spar	8
Middle Ground Shoal	24½	Red Spar	11
New Baltimore Rock	7½	Black Spar	12
Austin Rock	26	Red Spar	8

Hudson River Channel Distances.
— Statute Miles —

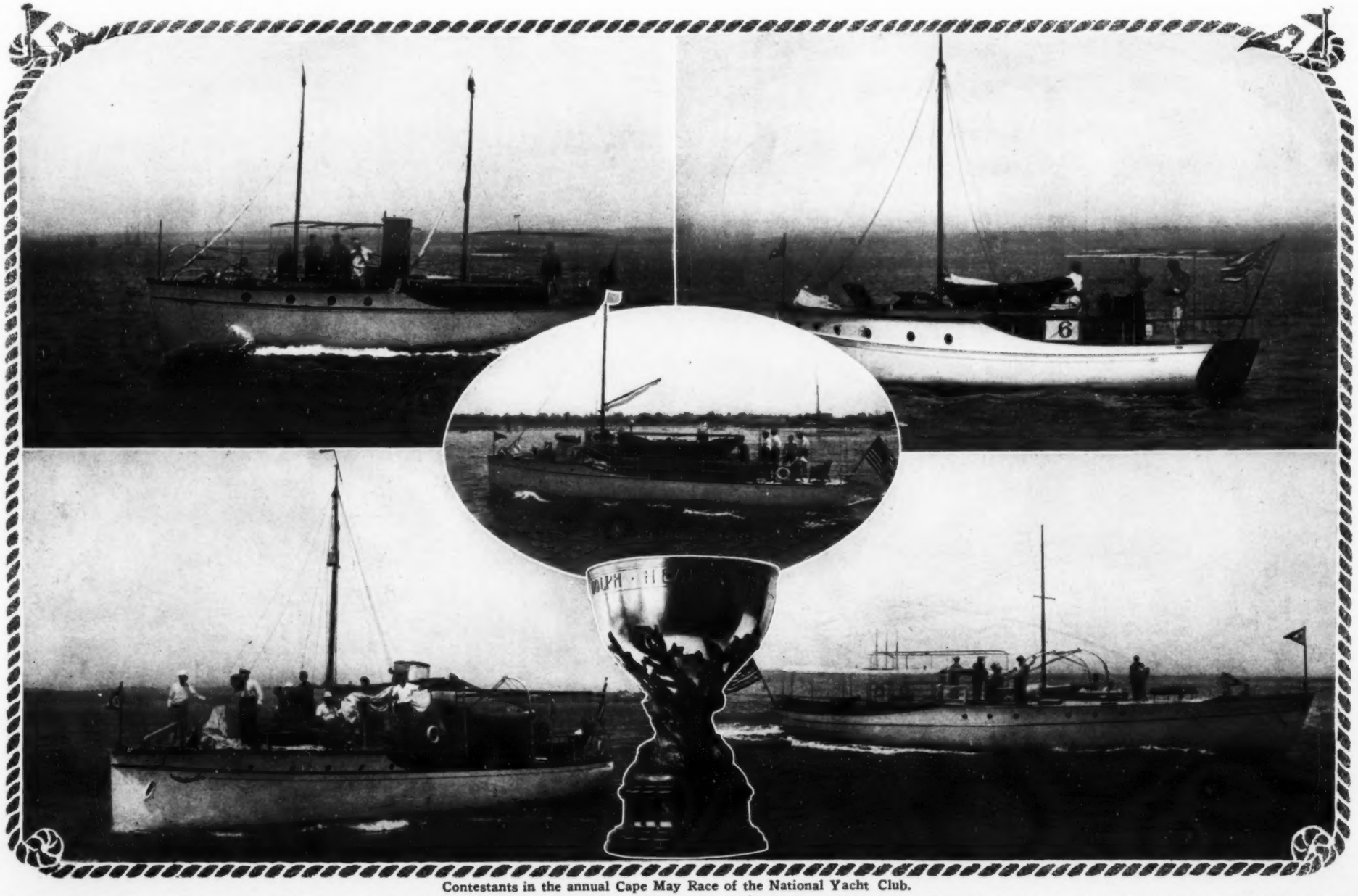
Compiled by C. F. Chapman 1911

	Yonkers	Hastings	Piermont	Nyack Tarrytown	Ossining	Croton Pt.	Haverstraw	Stony Point	Verplanck Pt.	Peekskill	Iona Island	West Point	Cornwall	Newburgh Poughkeepsie Bridge	Esopus Light	Rondout	Saugerties	Catskill	Athens Hudson	Coxsackie	Stuyvesant	New Baltimore	Castleton	Albany
New York W. 42nd St.	8	12	15	18	23	24	27	30	31	33.5	35	42	46	50	65	73	76	80	91	101	108	112	115	119	125	134
Yonkers		4	7	10	15	16	19	22	23	25.5	27	34	38	42	57	65	68	72	83	93	97	104	107	111	117	126
Hastings			3	6	11	12	15	18	19	21.5	23	30	34	38	53	61	64	68	79	89	93	100	103	107	113	122
Piermont				3	8	9	12	15	16	18.5	20	27	31	35	50	58	61	65	76	86	90	97	100	104	110	119
Nyack Tarrytown					5	6	9	12	13	15.5	17	24	28	32	47	55	58	62	73	83	87	94	97	101	107	116
Ossining						1	4	7	8	10.5	12	19	23	27	42	50	53	57	68	78	82	89	92	96	102	111
Croton Pt.							3	6	7	9.5	11	18	22	26	41	49	52	56	67	77	81	88	91	95	101	110
Haverstraw								3	4	6.5	8	15	19	23	38	46	49	53	64	74	78	85	88	92	98	107
Stony Point									1	3.5	5	12	16	20	35	43	46	50	61	71	75	82	85	89	95	104
Verplanck Pt.										2.5	4	11	15	19	34	42	45	49	60	70	74	81	84	88	94	103
Peekskill											1.5	8.5	12.5	16.5	31.5	38.5	42.5	46.5	57.5	67.5	71.5	78.5	81.5	85.5	91.5	100.5
Iona Island												7.0	11.0	15	30	38	41	45	56	66	70	77	80	84	90	99
West Point													4	8	23	31	34	38	49	59	63	70	73	77	83	92
Cornwall														4	19	27	30	34	45	55	59	66	69	73	79	88
Newburgh Poughkeepsie Bridge															15	23	26	30	41	51	55	62	65	69	75	84
Esopus Island																8	11	15	26	36	40	47	50	54	60	69
Esopus Lt.																3	7	16	26	32	39	42	46	52	61	
Rondout																	4	13	23	29	36	39	43	49	58	
Saugerties																		9	19	25	32	35	39	45	54	
Catskill																			10	16	23	26	30	36	45	
Athens Hudson																				6	13	16	20	26	35	
Coxsackie																					7	10	14	20	29	
Stuyvesant																						3	7	13	22	
New Baltimore																							4	10	19	
Castleton																								6	15	
																									9	

Table V.—The distances, in statute miles, from any point on the Hudson River to any other point.

Table VI.
Time in Minutes and Seconds to Make Distances at Various Speeds Per Hour.

Distance Miles.	Miles Per Hour. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5
⅛	3:45	3:28	3:13	3:00	2:49	2:39	2:30	2:22
½	5:00	4:37	4:17	4:00	3:45	3:32	3:20	3:09
⅝	6:15	5:46	5:21	5:00	4:41	4:25	4:10	3:56
¾	7:30	6:55	6:25	6:00	5:38	5:18	5:00	4:44
⅞	8:45	8:05	7:30	7:00	6:33	6:11	5:50	5:31
1	10:00	9:14	8:34	8:00	7:30	7:04	6:40	6:19
1⅛	11:15	10:23	9:38	9:00	8:26	7:57	7:30	7:06
1¼	12:30	11:32	10:42	10:00	9:22	8:50	8:20	7:53
1⅜	13:45	12:41	11:47	11:00	10:18	9:43	9:10	8:40
1½	15:00	13:50	12:51	12:00	11:15	10:36	10:00	9:28
1⅝	16:15	15:00	13:55	13:00	12:11	11:29	10:50	10:15
1¾	17:30	16:09	14:59	14:00	13:07	12:22	11:40	11:02
1⅞	18:45	17:18	16:04	15:00	14:03	13:15	12:30	11:50
2	20:00	18:28	17:08	16:00	15:00	14:07	13:20	12:37
2⅛	21:15	19:37	18:12	17:00	15:56	15:00	14:10	13:24
2¼	22:30	20:46	19:16	18:00	16:52	15:53	15:00	14:12
2⅜	23:45	21:55	20:21	19:00	17:48	16:46	15:50	15:00
2½	25:00	23:05	21:25	20:00	18:45	17:39	16:40	15:48
2⅝	26:15	24:14	22:29	21:00	19:41	18:32	17:30	16:36
2¾	27:30	25:23	23:34	22:00	20:37	19:25	18:20	17:23
2⅞	28:45	26:32	24:38	23:00	21:33	20:18	19:10	18:10
3	30:00	27:42	25:42	24:00	22:30	21:11	20:00	18:57
4	40:00	36:56	34:16	32:00	30:00	28:14	26:40	25:14
5	50:00	46:10	42:50	40:00	37:30	35:18	33:20	31:36
6	60:00	55:24	51:24	48:00	45:00	42:22	40:00	37:54



Contestants in the annual Cape May Race of the National Yacht Club.

In centre, Ilya, the winner, owned by J. G. N. Whitaker, of the Yachtsmen's Club of Philadelphia; above, on left, Sim Too, owned by vice-commodore, A. C. Soper, of the National Yacht Club; on right, Canadice, belonging to R. S. Mills, of the National Yacht Club. Below, on left, Caliph, owned by Mr. M. E. Brigham, of the Ventnor Yacht Club; and on right, Caroline, owned by M. Frank Dennis, of the Columbia Yacht Club. The cup also shown was donated by William Randolph Hearst.

In Sea Bird Across the Atlantic.

The Story of the Cruise of the 25-Foot Auxiliary Yawl as so Far Completed. An Account of the Quick Run to the Azores in Spite of Adverse Conditions.

By N. T. Grunland.

Special Representative of MoToR BoatinG on board Sea Bird to Martha's Vineyard.

THREE of the cleverest and keenest sailormen that ever stepped, waved a last farewell to land when the little auxiliary yawl Sea Bird, of one ton burden, sailed away from the little pier at Oak Bluffs, on Martha's Vineyard, in Vineyard Sound, on the morning of Sunday, June 11, on her voyage to Rome. While the yachtsmen, Thomas Fleming Day, T. R. Goodwin and Fred Thurber, were given their biggest send-off when they left the dock at the Rhode Island Yacht Club in Narragansett Bay, that was for but a small stage of their journey, and only a chosen few were on hand when the daring spirits bade farewell to land for many weary days to come, out there in Vineyard Sound.

Much has already been written of the passage down Narragansett Bay, and I shall pass lightly over this stage of the journey. Suffice it to say that Sea Bird, amid a volley of guns from vessels and the Rhode Island Yacht Club, prolonged cheers, wishes of good luck, and the waving of handkerchiefs, started away from the dock at the Rhode Island Yacht Club, in Narragansett Bay, exactly at 2 o'clock. A gentle breeze blew out of the west and there wasn't a cloud in the sky. As the little three-horse Knox engine was started, sails were hoisted, and she cut out a five-knot clip down the bay.

On all sides of her were yachts of all descriptions the crews of which were for the most part personally acquainted with at least two of the crew, and when they had gone about a mile and a half the big power craft, Cruiser III, owned by Ex-Commodore Babbitt, of the Rhode Island Yacht Club, drew alongside and offered a line which was accepted.

The three yachtsmen were supremely happy, and joked and laughed as if they were going down the bay on a little pleasure jaunt, instead of on a voyage across the Atlantic in a mere cockleshell of a boat. One by one the vessels of the pleasure fleet dropped astern or started up the bay again, leaving the yawl and Cruiser III to make their way down the bay alone.

Gould Island was passed close in and when off Hope Island, far down the West Passage in Narragansett Bay, the clouds started to pile up and the wind arose. The breeze had been out of the south and west, but it shifted suddenly to the southeast, right in off the Atlantic, and the clouds gathered dark and gloomy in the east, presaging nasty weather and rain. The fog banks started to role in as the ocean was neared, and we sat silent and pondering on the decks of the little vessel. Thurber who wore a thin silk shirt and duck trousers, went below for his oilskin jacket to keep the mist out, while the freshing breeze seemed to blow right through one. It was fortunate that the Sea Bird had the benefit of a tow, for she would not have been able to make much headway herself in the chop sea and head wind. The fog became thicker and in the gathering gloom it became almost impossible to see the land on both sides of the bay.

Pulling little Sea Bird through the water at the rate of about eight knots, which almost buried the deeply laden craft, Cruiser III, was soon in Newport Harbor. She towed the sea rover through the harbor and out to a point midway between Fort Adams and the Dumplings, the great pile of rocks which makes the entrance to Narragansett Bay on that side a very narrow one. With the open sea in front Cruiser III pulled in the tow line, and with a last toot of the whistle, and many expressions of thanks from Day and his crew, the little Sea Bird started out of the passage in front of the dull, gloomy walls of the fort, hardly distinguishable in the gathering dusk and fog, with her motor running cheerily. The mainsail and jib were quickly hoisted by Goodwin and Thurber while Day held the stick, and she leaned slightly to the southeast breeze as she stood out under the steep crags which lined the shore on the ocean side of the fort and shaped her course for the bell buoy off the end of the dangerous, jaged Brenton Reef.

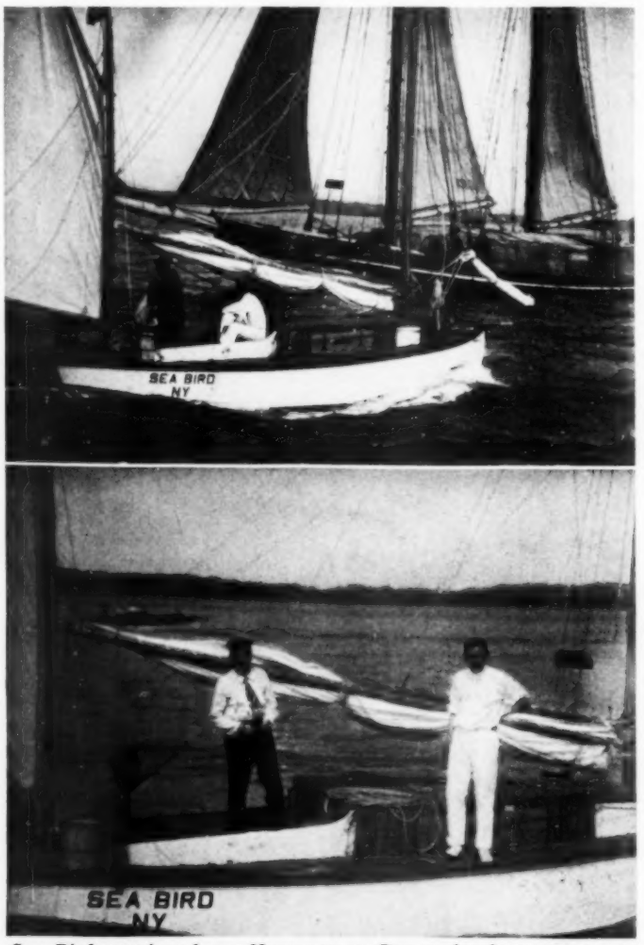
Close hauled on the port tack, with her engine running well, she soon picked up the bell buoy, which could be heard but not seen until it was close aboard, and rounding it the Sea Bird headed almost directly into the eye of the wind, still standing on the port tack. By the greatest of good fortune the wind, as if aiding the hardy navigators, hauled sharply around into the southwest, almost full on her starboard beam. Exactly at 5:25 the little Sea Bird rounded the bell buoy, and a little later, when the wind shifted, she hit a six-knot clip in the direction of Vineyard Haven.

As soon as she became straightened out on the course to Vineyard Sound Lightship, eight miles away and directly in the middle of Buzzard's Bay, which must be crossed to get to Oak Bluffs, in Vineyard Sound, Goodwin began to think of supper, and going below he pottered around for a while, with the result that he soon had one of his everlasting steaks, a rare delicacy in his eyes, with some coffee, bread and butter, and other side dishes, a feast fit for a king, or so it seemed to the hungry sailormen. In all the years that Goodwin has sailed on small boats he has acted as cook, as well as skipper, navigator and light sailman on the great majority of them, and that of surveyor of the grub is one of his many duties aboard the Sea Bird. It is a self-imposed task, for Ray seems to take some sort of keen delight in messing with a Primus stove.

Goodwin and Thurber washed the supper dishes, mostly overside, and at 8 o'clock Goodwin took the tiller. The course was almost due east for Vineyard Sound light vessel, and with a steady breeze sending the heavily laden craft through the water at a good clip assisted by the little engine, which worked like a charm. Hen and Chickens Light vessel was soon alongside. Goodwin passed the light vessel at exactly 10:30, passing close under her huge, dark sides.

During the run from Brenton Reef to the light vessel there had been several changes in the weather. Shortly after rounding the bell buoy at the reef, a short, sharp rain squall, which seemed as if the heavens had opened, hit the little vessel, shutting her in with walls of steaming water on all sides. Day held the stick at the time and escaped a wetting only by rushing into his oilskin, while Goodwin was below making supper. With the passing of the rain squall the wind dropped slightly, rising and falling from a gentle whisper, which hardly filled the sails, to a good wholesale breeze, which sent her sharply on her side and almost rolled the sleepers below out of their bunks.

It was a lonely, gloomy and thoroughly disagreeable watch which Goodwin had that night, with everything about him damp and dreary. The rain and fog made his clothes anything but dry and the blackness of the night, without a star or moon to illuminate the heavens, together with the whistling of the wind and the rush of white water past the vessel's side, to say nothing of the enormity of the undertaking before him, made Good-



Sea Bird running down Narragansett Bay under her own power. Note the low freeboard.

win's watch anything but a merry one.

Goodwin kept Sea Bird steadily on her easterly course until his watch was over, at 12 o'clock, by which time the little vessel had made such good progress that she was off Quick's Hole, which had been decided upon as the best of the various entrances into Vineyard Sound to pass through. Just before attempting the narrow, torturous channel in the Stygian blackness Goodwin aroused Day, who was on from 12 o'clock until 4. Goodwin was more familiar with the channel in Quick's Hole, having passed through it many times under all conditions, and picked out the course. The land, which lies but a few yards on either side, was hardly visible as Sea Bird slipped through between the two islands and she was soon out on Vineyard Sound striking smoother water.

Fred Thurber, T. R. Goodwin and Thomas Fleming Day aboard Sea Bird shortly before the start.

The wind fell away almost entirely, occasionally coming up over the quarter and then shifting to the beam or ahead, but it helped but little, and the engine was kept going steadily, doing good work. Day was still at the tiller when the first streaks of dawn began to illuminate the horizon in front of him, and soon the sun rose, but it was not visible, for the heavens were still covered with dark, heavy clouds.

By 3:30 it was daylight on the sound, and the compass was no longer needed, for the islands of the Elizabeth group, including Naushon, Nashawena and Pasque, were clearly visible on the port side, while Martha's Vineyard and the harbor of Vineyard Haven were in plain sight on the starboard. Day threw the switch off the binnacle light and steered the Sea Bird by observation.

At 4 o'clock shortly after daylight, he aroused Fred Thurber. Stretching himself and rubbing his eyes, Fred stuck his head out of the tiny companionway and gazed about him. The scene was a familiar one to him, for it was almost exactly in that spot that the ill-fated Kitcinque, the power boat in the New York to Marblehead race, burned to the water's edge and sank about two years ago, while Thurber was a member of her crew.

Sea Bird was about off West Chop, the point of land running out to the eastward of Vineyard Haven, when Day relinquished the helm to Thurber, but he did not turn in, as the Sea Bird was within a couple of hours of Oak Bluffs. Thurber held the stick while he swung Sea Bird, now under power alone, in behind West Chop and into the little harbor of St. Anthony, where she tied up at Capt. Charley Joy's dock at exactly 5:25, 12 hours after she left the Brenton Reef bell buoy.

Making fast to the dock in the placid waters of the little harbor the three mariners went ashore and Mr. Day secured the compass he had come after. Gasoline and oil had been recklessly wasted on the trip across and two extra gallons of kerosene were taken aboard, together with more gasoline. The three took plenty of time, and shortly after 10 o'clock were again ready for sea, this time for the Azores.

The mariners thought they had left everything like cheers and send-offs behind, but their fame had preceded them, and the members of the cottage colony at Oak Bluffs had gathered at the little pier to see them off.

The Sea Bird was next reported on noon Monday, when she passed close in by Nantucket Shoals light vessel, the last point before the Azores are reached. All was well aboard her at the time and the sailors asked to be reported.

To all outward appearances, at least, Sea Bird seems utterly unfitted for a voyage of this kind. She is what is known as a V-bottom craft, looks very ugly and homemade, on the water, and appears to be anything but the great sea boat she really is. Loaded down as she is with 2,200 pounds of provisions and supplies, including many gallons of oil and gasoline, her deck is a scant eight inches over the water and a slight sea almost buries her. It is expected, however, that the long swells of the Atlantic will be taken better by the Sea Bird than the short, choppy waves of Buzzard's Bay and Vineyard Sound.

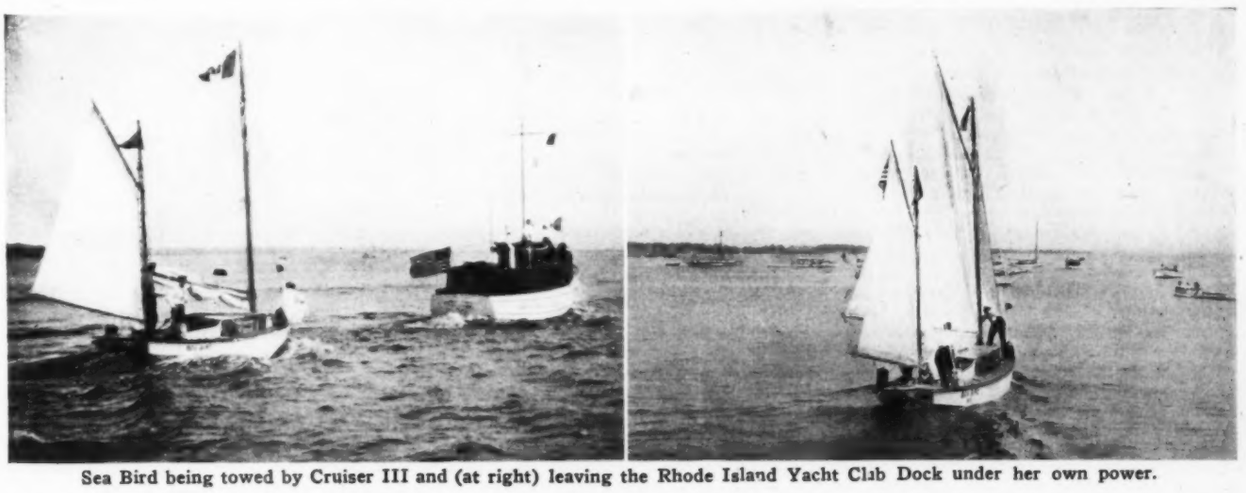
Sea Bird, in spite of her shallow appearance, is really a deep boat. Her hull runs far down and terminates in a keel of combination wood and lead, giving the little vessel a great deal of stability. Her rig is small for a boat of her size and it will take a terriffic blow to make it necessary to reef or lower the mainsail. Every stay and every halliard in the upper works is of absolutely the best material, and the chances are very few that anything will go wrong with the rigging, no matter how hard the wind blows.

It is not generally known that Sea Bird is extremely slow, and is almost utterly unable to go to windward with her sails alone. She will but point into the eye of the wind and falls off to leeward, so that windward work on this trip is a practical impossibility, unless the engine is called into use, and even this will be of little use if the wind blows 10 knots or more. It is only a three horse power Knox, and is intended more to help the vessel when sailing off the wind in light weather, and to handle her in a sea way, in assisting in keeping her head up to the wind, etc., than for actual motive power to help her over the vast Atlantic stretches.

The engine has been thoroughly tried and tested, and according to Mr. Goodwin, who is in charge of it, is absolutely reliable. In the practice runs he had in the Sea Bird a few days before the start it ran like a watch and consumed very little "juice." She can be run on gasoline or kerosene equally well, and during the first stage of the journey only kerosene will be used, in order to get it out of the way, for there was no place to store the two dozen gallon cans inside the boat, and they were lashed on the starboard side of the deck house before the start.

The engine is located under the tiny hatchway leading into the cabin and is not in the way in the least. It occupies very little space and does not interfere with the sleeping accommodations. When it is to be started Goodwin removes the hatchway stairs and cranks up, after which it requires no further attention. The exhaust is above water on the stern.

Sea Bird is equipped with four gasoline tanks, one forward almost in the peak of the boat, one built under a wooden covering in the after end of the cockpit and one on either side of the cockpit, making that very small, hardly large enough to hold two men. The four tanks together hold 150 gallons of gaso-



Sea Bird being towed by Cruiser III and (at right) leaving the Rhode Island Yacht Club Dock under her own power.

line, which, with judicious use, Goodwin hopes will last until the Sea Bird gets to the Azores. The gasoline and oil will be used but sparingly, and only when it is absolutely necessary for the safety of the boat or to assist her when the wind will not do so.

The problem of the stowing of the oil was a difficult one, and none of the three felt that it had been properly solved when the cans were lashed alongside the deckhouse. The oil is in high, square cans, one gallon to each can, and was left until last when the food and stores were placed aboard the vessel. There was no room in the cabin or any part of the boat and it was at last decided that they be lashed alongside the deckhouse. The 24 cans, ranged two deep, were placed on the deck on the starboard side and securely lashed down to the side of the cabin with the board from which the sea anchor is to be constructed tied outside of them. Although it looks as if this is very insecure it is really the only thing to do. No sea can sweep them away, but the lashing will have to be removed each time that a can of oil is taken away. It will be difficult, also, in case Sea Bird is caught in a gale, to remove the board for the sea anchor without losing the supply of oil over the side.

Mr. Day, who is not a well man and is taking this trip more to recuperate from his long siege of work than for any other reason, would see no one and turned his correspondence over to a newspaper friend of his in this city to handle for him. He spent all his time about the Sea Bird, which was being put into condition at the Narragansett Bay shipyard at Sabin's Point, of which T. R. Goodwin is president.

Sea Bird was brought from Vineyard Haven to this bay two weeks before the start by Mr. Goodwin and Ernest Arnold, and her seaworthiness was proven at that time, for she weathered a gale which sent over 100 vessels scurrying to the shelter of Vineyard Haven. Nothing was said about the craft, but she was quietly hauled out on the railway at Sabin's Point and thoroughly overhauled. Her bottom was put into good condition, she was painted outside and in, and practically an entire new set of rigging was put on her. On the Tuesday before the start the sails were bent and she was practically ready for sea. The installation of a Primus stove, and the wiring of the boat for electric lighting for the binnacle, together with a final tuning of the engine, followed.

On the morning of the day before the start Sea Bird was ready, but the stores and supplies had not gone into her. The food supply had been purchased from a local market for $85, this being the lowest figure quoted in a competition with several others. The food alone weighed somewhat over 2,000 pounds, and it took from 1 o'clock until 5:30 to store it.

The packing of the provisions was a delicate operation, and required considerable thought. Mr. Day himself superintended this part of the job and stowed everything to his own satisfaction. Working for five hours in the hot cabin he stowed away under berths, under the cockpit, and cabin floors and in various lockers dozens of cans of soup, beans, succotash, pears, peaches, corned beef, ox tongue, and other foods which would keep. The kind and location of every article of food which went into the boat was carefully marked down in a note-book by Mrs. Goodwin, so that a reference to it will show at once where every kind of food is kept. The food is enough for 90 days, and plenty of provisions have been made for an extended stay at sea, providing the Sea Bird is blown far off her course.

Following the stowing of the canned goods the few articles of fresh food were passed down. There was a large ham, about 20 pounds of bacon, oranges, lemons, etc., which were placed where they would be readily acceptible. The extra coils of rope, anchor, etc., came next and when the task was completed Sea Bird was down several inches below her sailing lines and everyone was thoroughly tired out.

With the packing of the provisions the little yawl was ready for sea. She was taken across the bay to the Edgewood Yacht Club about 6:30 the night before the start was made, going over under power, and moored there until 1 o'clock the next day, when she dropped down the river and lay alongside the wharf of the Rhode Island Yacht Club until the start was made at 2 o'clock.

It is a little known fact that the king and queen of Italy are personally interested in this venture, and are anxiously awaiting news of the boat. The idea of the trip originated in a conversation Mr. Day had with a number of members of the Royal Automobile Club of Milan, when King Humbert, a keen yachtsman, questioned the practicability of crossing the ocean in a small boat. Mr. Day waxed enthusiastic and stated that he would go back to America and start a race across to Rome which should end in August. The king at once offered a $1,000 cup as a prize. Mr Day started to organize his forces but found that there were not enough yachtsmen in this country who cared to undertake a trip of this sort, or who had the money to do so, and he was forced to inform the king of the fact.

Although unable to induce others to make the trip, Mr. Day determined that one boat at least should go over, and made up his mind to take her over himself. He informed the king of the plans for the trip, and received word in reply that if he accomplished it the $1,000 cup offered for a race would be presented to him, and the king himself would receive him and his crew upon their arrival at Rome. Mr. Day was also informed that an Italian gunboat would meet Sea Bird somewhere in the Mediterranean and escort her in triumph up the Tiber to Rome, where the king and queen will board her and personally welcome the American sailors.

The Automobile Club of Milan, among whose members the idea of this trip was first aired, is intensely interested in the venture and cabled Frederick L. Barnes, secretary of the Rhode Island Yacht Club, to cable to them the time of the start and the conditions, as well as any news which might be received. The Italian, French, German and English press has taken the matter up and published long stories of the trip, while half the sea-faring population of the old world is watching and waiting for news of Sea Bird.

Up to the time of going to press nothing had been heard from the little vessel. She was due at Fayal, in the Azores, June 30, 20 days after leaving the Rhode Island Yacht Club, but to make this distance in that time required that she reel off about 100 miles a day, and this is well nigh impossible when the slow speed of the vessel is taken into consideration. It is unlikely that any steamers will bring word from her, for the Fabre Line steamers running from Providence and New York, the Azores, Lisbon and Marseilles, are the only ones in her path, and only one steamer in two weeks traverses the ocean pathway travelled by Sea Bird. Neither the Madonna nor the Germania, the two Fabre Line vessels, which have arrived in Providence since the departure of Sea Bird, have seen the little vessel, in spite of the fact that the captains of both were instructed to keep a close watch for her.

Leaving the Azores Sea Bird will probably encounter head winds, for the prevailing direction is east between the coast of Portugal and the islands. She will, therefore, work as far as possible to the northward, probably striking the Portuguese coast in the vicinity of Lisbon, and will then work downward, doing this in order to prevent being blown south to the African coast, from which it might take weeks to claw off with a strong head wind. After entering the Mediterranean the rest is easy and a quick passage is expected to Rome.

The Run to the Azores.

Goodwin's Story.

SEA BIRD arrived at the Azores Friday, June 30, exactly 20 days after leaving Providence and 19 days after leaving Oak Bluffs in Vineyard Sound. She reached Horta, a seaport city on the island of Fayal, in the center of the Azores group, from which city T. R. Goodwin, one of the members of the crew, sent a cablegram to the writer informing him of the details of the trip.

A remarkable feature of the trip is that Sea Bird made the distance to the islands in exactly the time Mr. Day said he thought he ought to make it if everything went well. "According to my reckoning," Mr. Day told me before the start, "we ought to be in the Azores June 30, 20 days after leaving here, but to do that conditions must be in our favor." That conditions were far from being in favor of the yachtsmen is shown in Goodwin's cablegram, which states, among other things, that Sea Bird had but eight days of favorable weather and was delayed by four days of calm and six days of head winds. The Sea Bird covered at least some distance on her course during eighteen days of the voyage and lost ground on only two. This was made possible by the little Knox engine, which kept her plugging along in the calms and helped her in the head winds, for she is unable to beat with sails alone. It is safe to say that if she had not been equipped with an engine, even such a little thing as the three horsepower Knox, she would still be out in mid-Atlantic, trying to reach the islands.

Goodwin's cablegram tells of two days of terrible storm, encountered shortly after leaving Nantucket Shoals Lightship. She lay to for two days to a sea anchor, which had been prepared before her start for just such contingencies, while a southwest gale, at times attaining a strength of 60 to 90 miles an hour, raged and tore over her. She was tossed like a chip, but survived the storm and the terrible, raging sea, in safety, while her crew stayed below in their tiny cabin, hardly large enough to accommodate the three.

The storm was encountered when Sea Bird was approximately 500 miles off shore, and after it had passed no heavy gales were encountered. Conditions became better as she proceeded, and during the last few days of the journey remarkable time was made, for a fresh breeze blew over the quarter all the way.

After telling roughly the main details of the voyage as described above, Goodwin's cablegram goes on to say:

"It can hardly be believed by people on shore, but it is true, nevertheless, that in the two days of storm we experienced, when we were unable to show a rag of sail and spent most of the time below in our little cabin, while terrible seas raged about us, picked us up, tossed us toward the heavens and dropped us down in a yawning gulf, the wind sometimes attained a velocity of 90 miles an hour. It is difficult for the mind to grasp this fact, particularly if one is not used to the sea and

(*Continued on page 76.*)

New York to Lake Champlain.

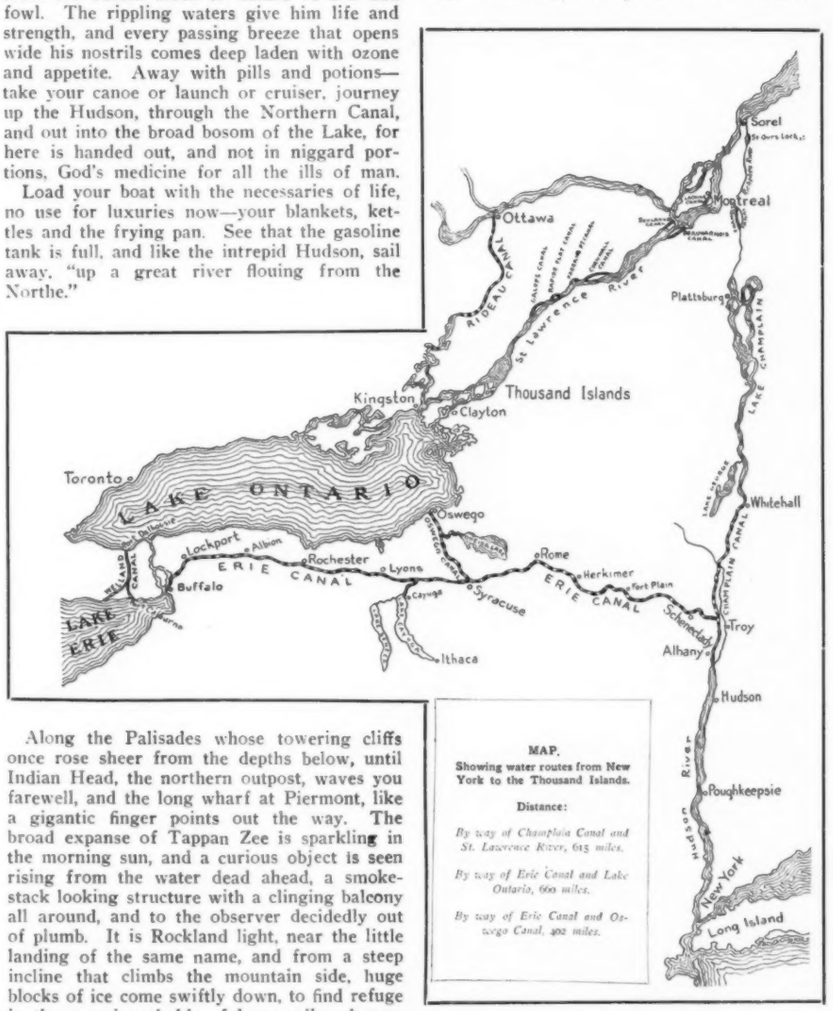
Practical Suggestions for the Motor Boatman Whose Vacation Cruise Lies Up the Hudson. With a Map Showing the Various Routes From New York to the Thousand Islands.

By Matt McCarty.

EDITOR'S NOTE.—*This article appeared originally in the June, 1909, issue of MoToR BoaTinG, and the text has been reprinted because of the constant demand for that issue, which has become exhausted.*

FROM New York to Lake Champlain is not a far cry, and the average motor boatman with a month's vacation—or even less—to his credit can make the trip easily, cheaply and to his great advantage in many ways. The route is all plain sailing, it abounds in legend and story, the charming vistas that open up at every turn delight the eye with rugged cliff or smiling meadow; here a gurgling brook winds through a tangled growth of fern and creeping vine, or deep bays where the long flags wave in pliant lines, tempt him from the beaten track to haunts of fish and fowl. The rippling waters give him life and strength, and every passing breeze that opens wide his nostrils comes deep laden with ozone and appetite. Away with pills and potions—take your canoe or launch or cruiser, journey up the Hudson, through the Northern Canal, and out into the broad bosom of the Lake, for here is handed out, and not in niggard portions, God's medicine for all the ills of man.

Load your boat with the necessaries of life, no use for luxuries now—your blankets, kettles and the frying pan. See that the gasoline tank is full, and like the intrepid Hudson, sail away, "up a great river flouing from the Northe."



MAP.
Showing water routes from New York to the Thousand Islands.

Distance:

By way of Champlain Canal and St. Lawrence River, 615 miles.

By way of Erie Canal and Lake Ontario, 660 miles.

By way of Erie Canal and Oswego Canal, 402 miles.

Along the Palisades whose towering cliffs once rose sheer from the depths below, until Indian Head, the northern outpost, waves you farewell, and the long wharf at Piermont, like a gigantic finger points out the way. The broad expanse of Tappan Zee is sparkling in the morning sun, and a curious object is seen rising from the water dead ahead, a smokestack looking structure with a clinging balcony all around, and to the observer decidedly out of plumb. It is Rockland light, near the little landing of the same name, and from a steep incline that climbs the mountain side, huge blocks of ice come swiftly down, to find refuge in the capacious holds of huge yellow barges that are moored hard by. Across the waters the low gray walls of Sing Sing prison lie grim and silent close along the shore. Haverstray Bay, four miles wide, swings sharply to the left, and the pungent smoke from its miles of brickyards rises in the still air. The high white light of Stony Point nestles among the trees that crown its summit, and with Verplank Point diagonally opposite makes here a narrow gateway. The flat top hills of Peekskill sweep away to the right, and Mt. Manitou and Dunderberg stand like sentinels at the southern gateway to bar your entrance to the far-famed Highlands, the frowning crags of the American Rhine.

Half-way through the Horse Race channel, Iona Island with its high round tower is seen to the left, and Old Glory, snapping the gusts that come from the dark defiles of Bear Hill, proclaim this place to be federal property. Anthony's Nose, pierced by a railroad tunnel, thrusts forth his stony face a little above and on the other side. Lady Cliff, fit name for a ladies' school, is perched high above the shore, the tumbling waters of Montgomery creek holding them aloof from the impressionable cadets of the West Point Military Academy, whose drill hall, library and other handsome buildings may next be seen. Opposite is Constitution Island, which in Revolutionary days held up one end of the monster iron chain which spanned the river here. Cro' Nest and Mt. Taurus rise on either hand and Storm King and Breakneck open the way to wide Newburg Bay, on whose shore the square tower of Washington's headquarters, massive and gray, stands out boldly.

If you have forgotten some essential for your trip or the "juice" is running low you may obtain here all that you may require, and the Newburg Yacht Club will extend a welcome hand to all who may seek shelter for the night. All is deep water here, but small boats usually keep to the western channel. Now Danskammer Point, with its queer Japanese looking bell and landing, puts forth its rock-ribbed reef, with Marlborough and Milton just above, where the West Shore road runs near the water's edge. This is not a bad place to lie to, alongside one of the docks, where you will be protected from the passing swells. Next comes Poughkeepsie where there is a yacht club with good moorings, and a genial lot of men. Just above the high bridge you will see the ruins of a huge iron furnace and here is a sheltered slip which will accommodate half a dozen boats and a more secure or snugger berth cannot be found, the next good anchorage being on the inside of Esopus Island several miles above. Keep over to the east shore now, and give Esopus light, situated in midstream, a wide berth; then to the west again past Kingston with its deep estuary below the long dyke and excellent facilities for mooring.

Again to the west side to avoid the "middle ground," and Turkey point opens up a wide bay with long brick yards to the left, and Cruger Island on the east. Directly ahead is Saugerties light on the end of a long pier. Watch out now for buoys and stakelights and always leave the red to your starboard as you go up the river. A sharp turn to the left after passing Saugerties creek, another snug place to hide from the swells of the big night boats, and you will avoid Livingston flats, marked with a red buoy. Germantown light is in midstream again with good water on either side. Now look back at the Catskills, which have been gradually coming nearer and nearer to the river bank and see how the "Old Man of the Mountain" lies prone and still, as he has lain since time was young, the head, the nose, the chin, the hands crossed on the breast, and the knee slightly bent, all outlined sharp and clear by ragged scarp or undulating mountain peaks. The village of Catskill is just above, with ice houses, a wide creek and a pleasant bay. Keep close to the west side now, and follow the marks closely, with no short cuts unless you wish to go overland, for this is Percy Reach, with many flats and shoals but well buoyed and lighted. Hudson lies across the river and Athens on your side. To avoid the weed grown middle ground, when nearly opposite Coxsackie steer for the high promontory of Newton Hook, and pass between it and the ice house on the island. Coxsackie light is situated on the northern end. Mind your buoys and bear up for Stuyvesant light on the east bank, run in towards Coeymans to the left until past Barren Island, with New Baltimore just above and now the way is hemmed in by Government dykes. Castleton is the last village to pass on the east; keep in the middle of the river and watch out for buoys, pass under the first of the long bridges that span the Hudson, "hug the dock," past tow boats, palatial river steamers, and small local craft and the Albany Basin lies before you and the Albany Yacht Club will greet you. The steward will get you gasoline and ice and groceries and one will need to stock up here, for to-morrow we enter the Northern Canal, with its locks and lifts and bridges, high and low.

By writing to the superintendent of public works, or a personal call, you must get a permit to navigate the canals, as the lockman will not pass anyone without this very essential document. Up the river again, under the first bridge at Troy, six miles above, keep close to

the high dock along the eastern shore, under another bridge, past huge shirt and collar factories—swift water here, so go slowly. If the first, or sloop, lock is not open, make fast or get out your anchor, for with the force of the waters tumbling over the State dam, lying-to is impossible. Run into the lock about half way up, throw bow and stern lines to the lockmen, who are usually alert and courteous, keep the bow to the side of the lock and let the stern swing out a little. Then the heavy gates close with a bang, a rattle of chains and a clanking of iron levers, there is a swift whirl of water under you, a drifting back for a few feet is followed by a sharp forward movement as the swirling water meets the solid oaken barrier, other paddles are opened and you quickly rise to the level of the river again, eighteen feet higher than you were, and above tide water.

Keep to the east side now until a peculiar-looking square tower rises from the water, head diagonally across again to the bridge spanning an opening, and you are at the Waterford entrance of the Champlain Canal. Interview the lockman at the little house three tiers above, and he will arrange for your passage through. Under a lift bridge and along the canal for a hundred yards and you will see a low red building with a modest sign "Collector's Office, Waterford." Go in here, show your permit and he will issue a clearance; this will give the next locksman authority to raise you to a higher plane.

Winding in and out, around sharp bends, where many a shady spot or tempting nook invites you to lunch "al fresco," the first town is lively Mechanicsville. Then under the hydraulic lift bridge, through locks where the upper Hudson flashes as it tumbles in its rocky bed below, past farm house, hamlet and little homes, where barefooted children rush out to cheer you as you slip along. Schuylerville, made famous by the surrender of General Burgoyne, offers a wide basin with good cheer close at hand, and a magnificent monument on an eminence near by commemorates this, the decisive battle of the Revolution.

At Northumberland you cross the Hudson just above a dam; keep out a little from the piers of the bridge on the towpath side. At the far end is another lock and here are the first evidences of the barge canal, an enormous gash in the earth, men, horses and hoisting machinery. At the pretty lock of Moses Kill is one of the best general stores on the route, and the proprietor is happiest when digging out great chunks of ice at a nominal fee or extolling the quality of his butter and eggs.

Fort Miller rests under a canopy of smoke, belched forth by the huge excavators and "mud diggers" which are tearing up thousands of yards of earth and rock; Fort Edward, a pretty village on the banks of the Hudson, has a charming side trip, to the grave of Jane McRae, where a monument near the old spring marks the spot where this maid was murdered.

A couple of miles farther, the Glens Falls feeder climbs the hillside, and deep-laden boats with many logs wend their way slowly to the monstrous pulp mills at the riverside. Fort Ann is the highest point on the Champlain system, and the three locks begin to lower one to the lake level. Lush meadows and fertile uplands give way to cliff and limestone hills, that hem one in on either side.

Lumber yards, canal boats, railroads; we are entering Whitehall, the end of the Northern Canal; visit the Collector's office and exchange your clearance for a "pass out." Again the rattle of chains, the creakings of windlasses, three steps this time, and you are out. Turn on the gasoline and puff away around the crook of Fiddlers Elbow. No limit to speed here; go as fast as you like and as far, you are in the lower waters of Champlain, the Great Lake of the Iroquois. In a cozy creek to the right lie the dismantled hulks of many an ancient water craft, from the historic batteau, to the modern side wheeler. On the rocky bluff dead ahead in former days, Col. Morin ambushed his savage allies and made murderous raids on the surrounding country.

The way is narrow and tortuous, but with plenty of deep water, as the State maintains a dredge here permanently and the lighthouse service is of the best. Keep the red now on your port side, for you are going toward the outlet of the lake. No fear of missing the channel, for it is hemmed in by high rows of sedge and water grass and wild rice, that form an impassable barrier to anything less supple than an eel. When the seeds are ripening in the late summer, blackbirds haunt these feeding grounds and the long pliant stems are bent nearly double by these myriad chatterers, who will rise in a veritable cloud as you pass, only to settle down again an instant later.

At the Narrows, a constricted passage between two high cliffs, there is an old ruined dock, a charming place for a noonday lunch, but beware of nightfall, for as the evening shadows lengthen, with a clarion call the mosquitoes fall upon you; mosquitoes in companies, regiments, battalions, seasoned veterans and raw recruits. They crawl into everything and everywhere; they bite through raincoats, veils and rubber boots. They fill the air with a buzzing screeching sound, that will drive one to jump into the lake and pull the water over his head in a vain effort to escape the awful din; the bite is bad enough, but that frightful wail—as old "Phonce" a Kanuck fisherman said, "Eet is not so mooch zee bite of zee mosquit, as eet is hees dam sing."

Cold Spring, Dresden and Putnam once were noted resorts for still fishing and trolling, slippery pickerel and voracious bass haunted the weed-grown banks, but the mud from the big dredges at the Whitehall end of the barge canal has so polluted the water that the fish have migrated. Gourleys Point, with its spicy odors where the big pine trees have cast down their countless needles, may entice you by its cool fragrance to cast anchor for the night. Wood, water, no mosquitoes, a good holding ground and a shelter from the south blow, all these are here and the shallows where the weeds are just awash, will furnish your table with the freshest perch that ever took a hook.

A few miles above, the rocky point of Ticonderoga pushes out boldly into the Lake; the long dock is the southern port of the Champlain steamers, and on the hill just ahead the gaunt ruins of old Fort Ti stand ghostly against the grass-grown slope. This was the famous "Key of the North." Here was fought the first authentic battle on the lake, and here bold Ethan Allen demanded entrance "In the Name of the Great Jehovah and the Continental Congress." The little river at its foot forms the outlet of Lake George, that lies imprisoned in its rocky gorge, beyond where Mt. Defiance frowns or smiles, as shifting clouds cast broad shadows athwart its rugged side.

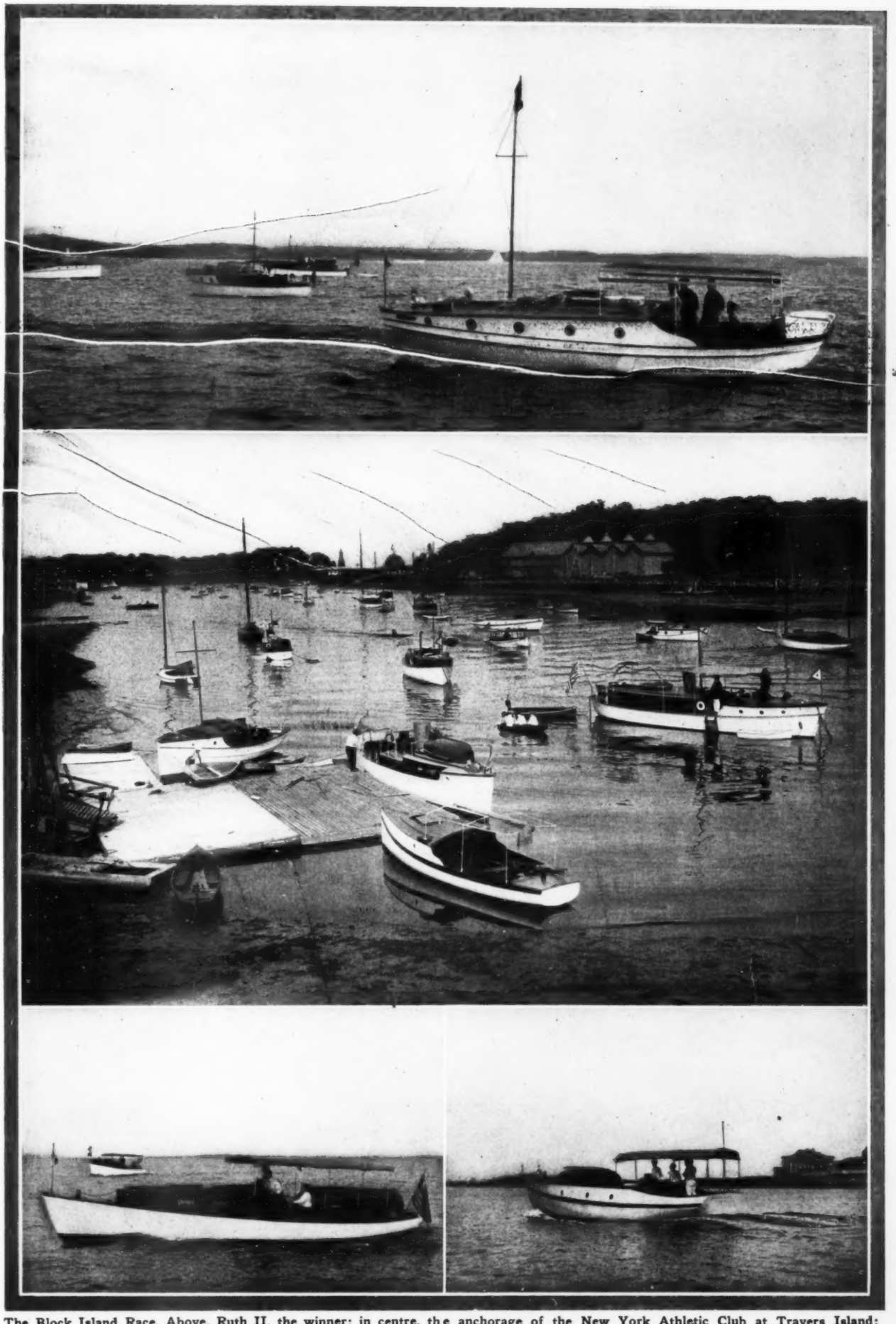
A mile above Fort Ti a railroad crosses the lake on a long bridge of piles. If you are large enough a huge pontoon swings clumsily to one side, but if you be of the smaller fry, two white boards mark out the place where there is width and water for your passage. The white building to the right is Larrabee's Hotel, and here an old horse ferry wabbles lazily across the lake to Addison Junction on the New York side. Long sand spits and shoals put out from here and the steamers keep close over to the clay hills on the right. Crown Point iron works, abandoned long ago, and the long dock where the steamer lands pass quickly by and the way is again to the Eastern shore until you make the sharp turn where Crown Point light stands out trim and clear. The low-lying ruins of the old fort are just below commanding the entrance to deep Bulwagga Bay. Here the lake widens and Port Henry with its iron mines climbs the steep hill three miles away. Not a good place to be caught in, is this, in case of a heavy south blow, for the short, sharp breakers of the lower lake then become long, green swells with a combing crest, that hisses as it sends aloft its cloud of seething spray. One will rarely find an inland sea that can get up a howling tempest in as short a time as this same Lake Champlain.

Barber Point light is just below the village of Westport, that lies almost hidden in its deep bay. Here is gasoline at the steamboat dock, and a general store on the slope above, but Pratt's dock is the better place if you wish to lie over for a day. Almost directly across is Basin Harbor and a little above on the same side is the crooked entrance to Otter Creek, where Commodore McDonough fitted out several small vessels in 1814, and fought and finished one Downie, a doughty Britisher. The high lantern of Split Rock light surmounts the curious rock of the same name, forming the northernmost peak of the long chain of weather-beaten cliffs that line the Eastern shore. This is the deepest part of the lake and the soundings show three to four hundred feet for many miles.

Here direct your course to either the east or the west bank according to whether your destination be Burlington or Plattsburg. The Four Brothers Islands rise up ahead almost in the center of the lake and then to the east comes the famous Rock Dunder, the neutral ground of the warring Indian tribes. The long black line is the government breakwater, and back of it, under the shadow of the Camel's Hump, Le Lion Couchant of the French, is Burlington, the largest city in Ver-

(*Continued on page 76.*)

Mystery, a new 60-footer owned by W. F. Cochran, of Baltimore, is credited with a speed of approximately forty miles per hour. She is equipped with two 150 h. p. motors.



The Block Island Race. Above, Ruth II, the winner; in centre, the anchorage of the New York Athletic Club at Travers Island; below, Classic and Elizabeth, winners of third and second places respectively.

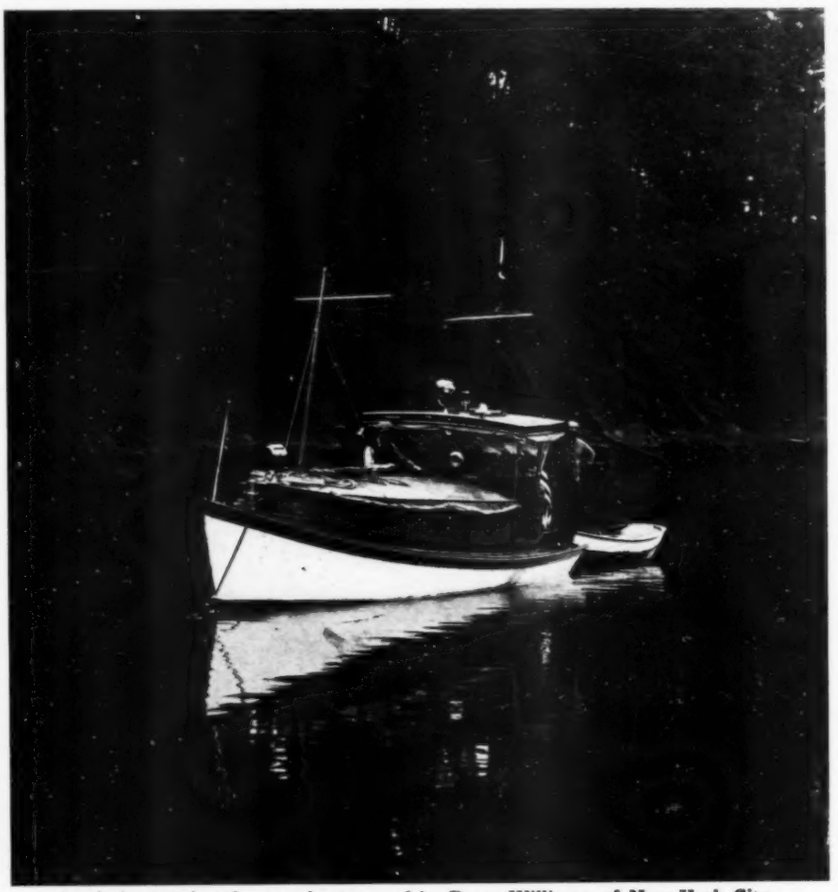
Various Boats for Various Uses.

A Motor Boat Equipped With a Wireless Telegraph System, Nameless, Now a Yacht Tender. And Several Other Interesting Boats From Various Sections of the Country.

WHAT is probably the smallest boat ever equipped with wireless telegraph apparatus is shown in the photograph herewith. The boat is owned by Percy Williams, of New York City, and, while the wireless installation is of very little practical use on so small a boat, it has furnished a lot of amusement and as an experiment is interesting.

The photograph at the bottom of the page is of Llao, a 39 ft. by 6 ft. high speed yacht tender owned by Commodore August Heckscher, of the Huntington Yacht Club. Llao was formerly Nameless, built last year for Messrs. Mellville and Heckscher as a defender for the Harnsworth trophy by the Atkin-Wheeler Company, of Huntington Harbor, L. I.

As Nameless, she was equipped with four 8-cylinder Herreshoff motors of 120 h.p. each, driving four screws. She was disabled during the regatta on the Hudson last fall, by running foul of a log, and was sunk, thus ending her racing career. Rebuilt as a yacht tender by her original builders, she is, as is seen by the photograph, a comfortable little craft with cabin, cushions, carpets, curtains and one of the 120 h.p. motors originally installed. Llao (Sea Devil) has chased away the hoodoo of trouble and disaster, and has settled down to a speed of 24 or 25 miles an hour; and has finally found herself.



A wireless-equipped motor boat owned by Percy Williams, of New York City.

At the top of the page opposite are shown two views of a rather remarkable little craft which hails from Newburyport, Mass. The remarkable results obtained during the trial of this tiny craft propelled by a 3-cylinder Pierce-Budd engine, have led Newburyport and Haverhill enthusiasts to predict that she will be able to show her heels to almost anything to be met on the Merrimac River.

The boat was built by Frank H. McKay on his own lines, and the old salts in the neighborhood winked at one another in amusement as they contemplated her boxlike shape.

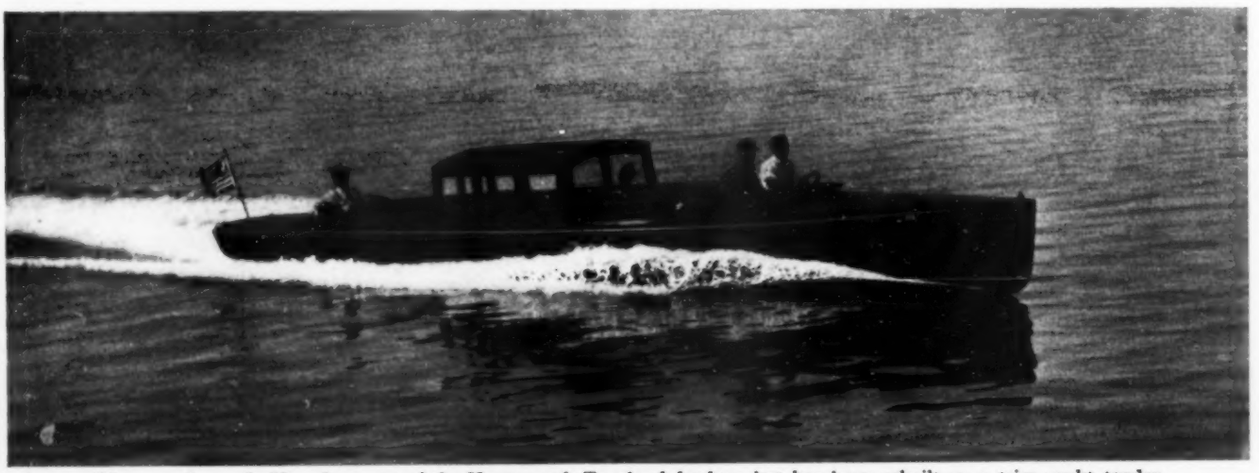
A wealthy Newburyporter, who's motor boat will carry a 100 h.p. engine, after witnessing the performance of McKay's boat, is alleged to have exclaimed, "Why, my new boat will not be able to touch that craft for speed."

When the hull was completed, a 4 x 4 three-cylinder Pierce-Budd motor was installed, and a short spurt on the river was sufficient to show that the craft possessed unusual speed. The boat was exhibited at the Crescent Motor Boat Show at Haverhill, and after the exhibition, demonstrations of her speed were given on the Merrimac. The return trip to Newburyport was then made under her own power at the rate of 14 miles an hour.

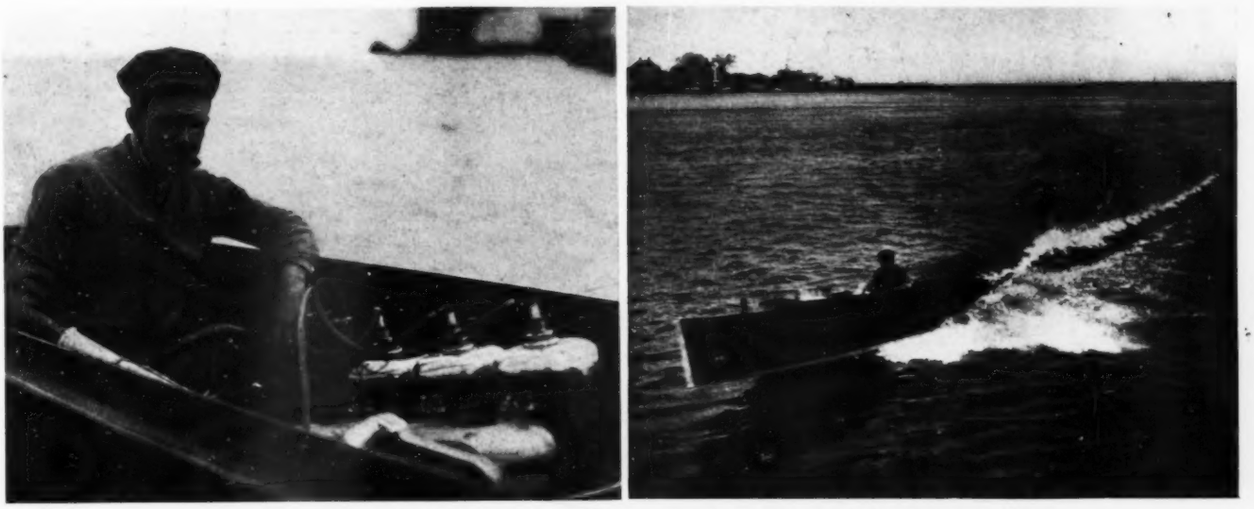
The boat is 19½ feet over-all by 35 inches beam.

The interesting little cruiser at the bottom of the page was designed by Mr. Theodore W. Brigham, vice-president of the Greenport Basin & Construction Co., for his own use. Living at Shelter Island, with business in Greenport, Mr. Brigham found it necessary to have a boat that could be used practically all the year round, and Nabob, as she is called, is the result of much study and has proved herself thoroughly capable after several seasons' use.

Nabob is 30 feet over-all, 28 feet on the water line, with 8 feet 3 inches beam and 22 inches draft. The forward trunk, which is of mahogany, is over the engine room, which contains two 2-cylinder 4-cycle Jager engines of 4 3/16 inch bore by 6-inch srtoke, each developing 8 h.p. These engines are connected by bronze shafts to twin propellers, and drive the boat at 8½ miles per hour. Besides the motors the engine room contains whistle, tanks, mufflers,



Llao was formerly Nameless, one of the Harnsworth Trophy defenders, but has been rebuilt as a trim yacht tender.



The 19-foot, stepless hydroplane and her builder, Frank H. McKay, of Newburyport, Mass.

three storage batteries, a dynamo, switchboard, tool racks, fire extinguishers and an auxiliary steering equipment for use in the winter or during bad weather. The finish in the engine room is in pine, with panels of matting, and the room is thoroughly ventilated by a hatch, five ports and the stack.

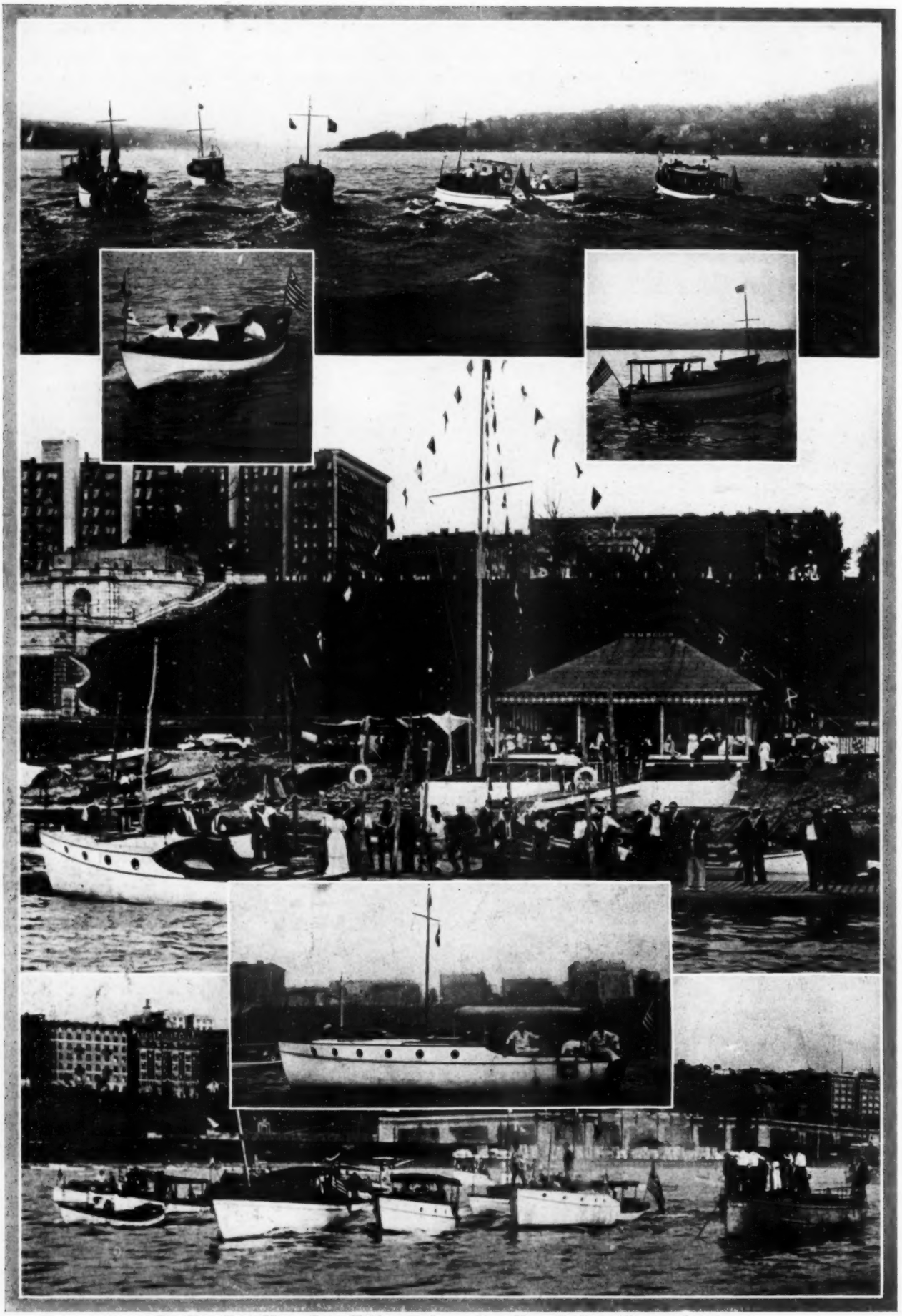
The after trunk is separated from the forward one by a small bridge deck, and under it are the living quarters. The main saloon is the principal compartment, and is large for such a boat. In it are installed two Pullman berths which, when let down, are each 42 inches wide. A passageway leads from the saloon to the engine room, the double power plant permitting the door to be in the middle of the boat. On the port side of this passage are to be found the ice-box, galley and linen lockers, while on the starboard side is the toilet-room. Under each of the Pullman berths of the main cabin are to be found three lockers for the storage of china, glassware, canned goods, etc. The companionway leads to the cockpit, and together with the skylight and ports amply ventilates the living quarters. The locker doors, port light covers, etc., are of marine mosaic, a translucent mosaic of shells leaded together as is custom ary in leaded glass windows.

Buffalo—an interesting study in light and shade.

The cockpit occupies the after part of the boat, and its floor is sunk somewhat below the level of the main deck, which is also somewhat below the level of the forward deck. Under the cockpit seat are the two gasoline tanks of 25 gallons' capacity each, which give the boat a radius of about 175 miles. On the port side of the bulkhead is the steering equipment, which is entirely independent of the steering gear of the forward house, either of which, however, may be used without disconnecting the other.

Buffalo, shown on this page, is a gasoline ferry boat used to carry passengers between Vicksburg, Miss., and Coney Island, La., and it will be noticed from the illustration that she is quite popular with those of the colored persuasion. She is 40 feet over-all, with 10 feet beam, and draws 10 inches of water. Her engine is a 12 h.p. heavy duty Buffalo.

The 30-footer, Nabob, now in her fifth season, is a thoroughly able little cruiser.



The New York Motor Boat Club's annual race from New York to Albany and return.

In center, the club house and float of the New York Motor Boat Club just before the start; above and below, two views of the start; the lower insert, Monreve, the winner, owned by E. E. Barney; upper right hand insert, Respite, owned by Dr. V. C. Pedersen and winner of second place; upper left hand insert, Yale, the smallest of the racers, owned by M. S. Doty.

The Yachtsmen's Club Ocean Race.

How Ilys Won Through the Fog and Added Another Trophy to Her Already Large Collection. The 196-Mile Contest of an Organization Famed for Its Long Distance Motor Boat Races.

ILYS, the crack ocean racer of the Yachtsmen's Club of Philadelphia, owned by Commodore J. G. N. Whitaker, added another trophy to its collection by winning the 196 nautical miles ocean race of that club, at Atlantic City on July 8 and 9. Among her contestants were Caliph and Isabella II, both of Ventnor, Atlantic City, Mariada, flying the Chelsea pennant, and the new Sybilla II.

The contest was the most successful ever run under the auspices of the Yachtsmen's Club. There were nine entrants in the two classes, five in the class measuring over 45 feet over-all, and four in the class of smaller boats. The start was exciting, and the finish was filled with unusual interest, because of the records of the boats entered.

The course was pronounced an ideal one for testing the seamanship of the navigators, at the same time making a pleasant run up along the Jersey coast. It was a triangular course of 196 nautical miles starting off Young's ocean pier at Atlantic City, going E., N. E., 6 miles; N. E. ¾ N., 24 miles, to a point opposite Barnegat Light; thence N. by E., ½ E., 42 miles, to Scotland Light Ship, leaving it to starboard; thence E. ⅝ S., 34 miles, to Fire Island Light Ship, leaving it to starboard; thence S. W. ⅛ W., 84 miles, to the buoy 6 miles off Atlantic City, whence the course was W. S. W., 6 miles, to finish line.

The run up the coast was a delightful one, the boats beating a dead headwind, with a sea just choppy enough to make sailing a delight, and keeping the navigators on the alert lest they lose vantage by some mischance. The boats were within sight of the numerous coast resorts until they neared Scotland light, then came the evening run out to Fire Island.

As the boats rounded Fire Island a heavy fog settled down on the sea, which shut out all lights from view. It was to this fog that the navigators of both Mariada and Sybilla II ascribe the loss of the race. Sybilla II rounded Fire Island light first, closely followed by Mariada. Turning on the 84-mile stretch back to Barnegat, the navigators set their wheels to the course and beat it through the fog, with the hope that the dense mist would lift before they reached dangerous sailing ground. In this they were mistaken. Both boats reached the neighborhood of Barnegat Inlet, and fearing they were off the course, or in danger of going aground on the bars, hove to waiting for the fog to lift.

Boats of lower rating had the advantage of being farther out at sea during the fog period, and by the time they reached the dangerous points near shore had the benefit of the fog lifting, leaving clear sailing all the way into the finish. Mariada claims a loss of one hour and a half on account of the fog, and Sybilla claims a loss of over three hours.

The boats starting, with their owners and the ratings given by the official measurer, were as follows:

CLASS OVER 45 FEET IN LENGTH.

Boat.	Owner.	Rating.
Sybilla II.	John F. Betz, 3d.	59.58
Mariada	R. M. & R. Moore	51.10
Isabella II.	Joseph Thompson	49.84
Caliph	M. E. Brigham	46.80
Ilys	J. G. N. Whitaker	41.94

CLASS 45 FEET LENGTH, AND UNDER.

Boat.	Owner.	Rating.
Skibo	Judge Endicott	50.43
Albatross	James Thompson	45.00
Chelwood	Rufus K. Lennig	39.42
Eugenia	D. Eugene Swaune	38.77

The smaller boats crossed the starting line at 11:05 a.m., on July 8, and were folowed at high noon by the five large cruisers. The race was run under American Power Boat Association's 1911 rules, with the usual requirements as to safety and fuel carried. Each navigator was required to call out the number of his boat in rounding the Scotland Light Ship, and Fire Island Light Ship. The awarding of the prizes was deferred until the reports from the light stations had been received and properly checked up. The results are as follows:

Boat	Time allowance.	Elapsed time.	Corrected time.
Ilys	5:47:26	23:59:10	18:11:44
Mariada	2:16:43	21:16:00	18:59:17
Caliph	3:44:48	22:54:00	19:09:12
Isabella II.	2:39:45	22:04:50	19:25:05
Sybilla II.	Scratch	22:47:00	22:47:00

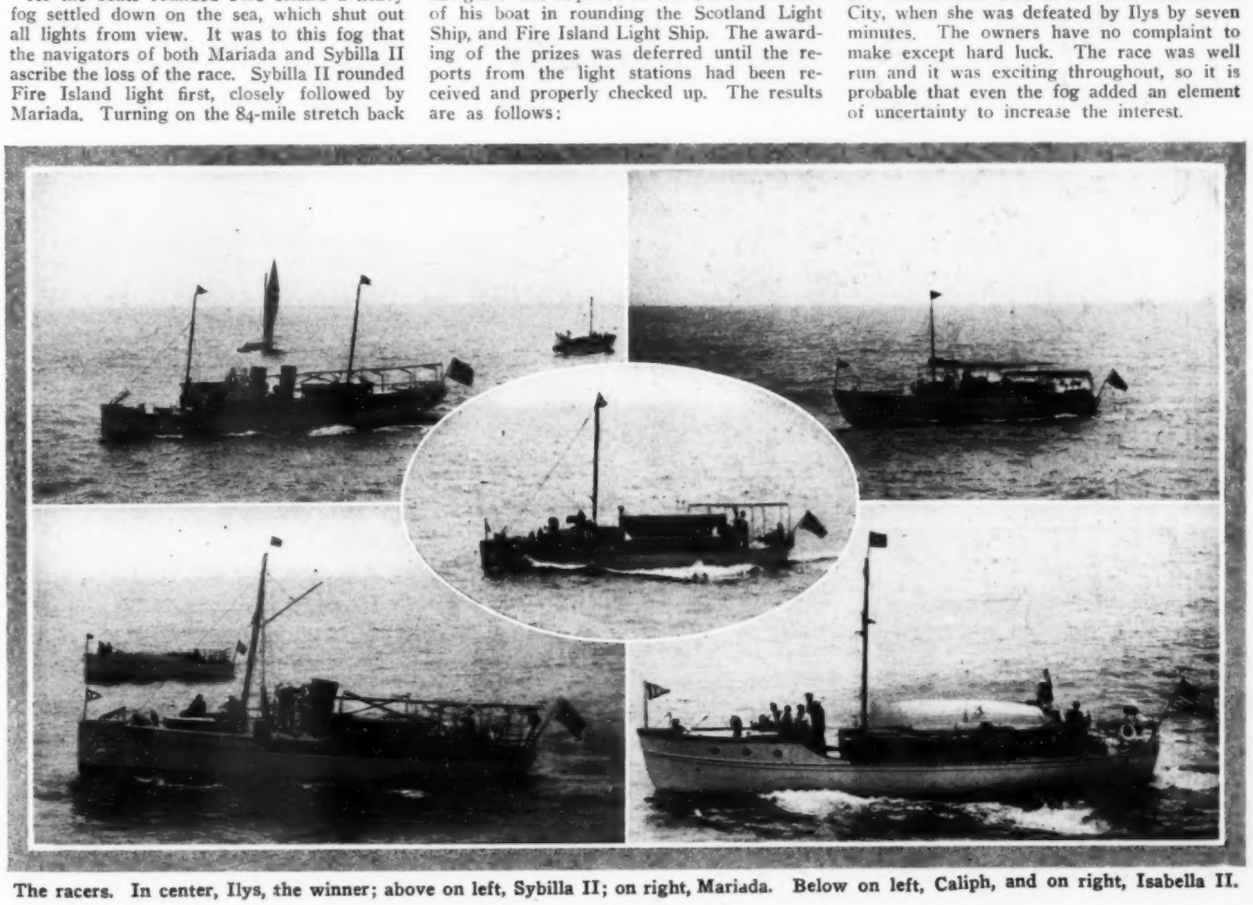
CLASS 45 FEET AND UNDER.

Boat	Time allowance.	Elapsed time.	Corrected time.
Chelwood	4:31:37	25:00:00	20:28:23
Albatross	1:56:43	24:31:45	22:35:02
Skibo	Scratch	24:02:30	24:02:30
Eugenia	4:59:10	Time not taken.	

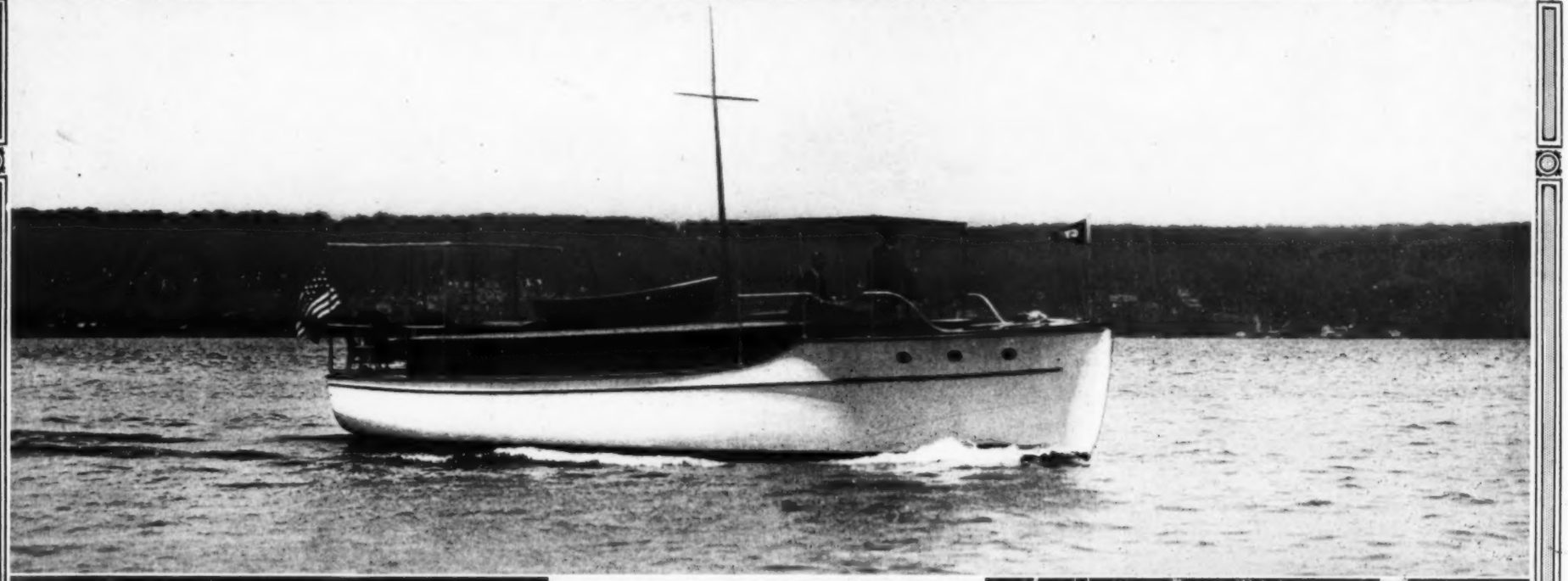
Accepting the statements of the navigators on the return from the race the dense fog that beset the boats after midnight played an important part in the result. Had there been no fog, but instead, a clear night with a good sea the result would likely have been different. All agreed that the fast boats suffered in consequence, by reason of being caught off shore near the finish line, and fearing to proceed were held up, allowing the boats with time allowances to creep up on them sufficiently to win the races.

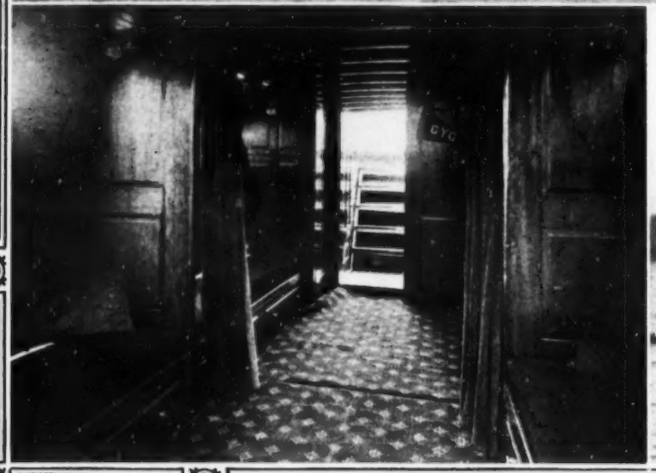
Interest in the work and showing of Sybilla II, Mariada, Ilys and Caliph and the other three boats of the first-class was intense. It was the first race for Sybilla II, and her owner, Mr. Betz, was keenly disappointed, and declares that but for the fog he would have won easily, notwithstanding that his boat had engine trouble on the way up the coast. To add to his troubles he found himself without an engineer at the start of the race, and pressed his chauffeur into service.

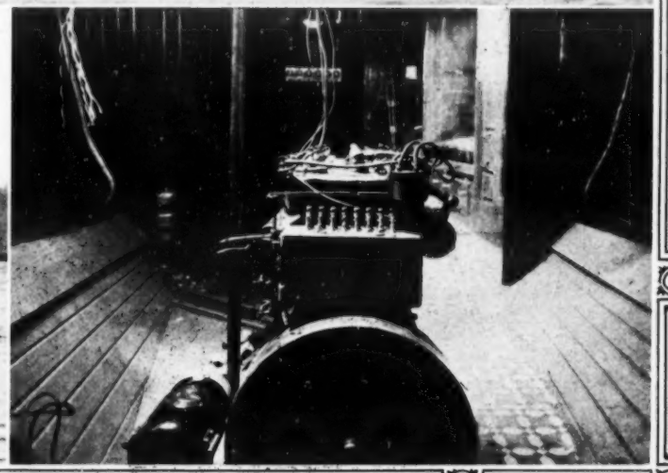
Mariada ran her second race. Her first effort at the racing game was a year ago in the Yachtsmen's Club ocean race off Atlantic City, when she was defeated by Ilys by seven minutes. The owners have no complaint to make except hard luck. The race was well run and it was exciting throughout, so it is probable that even the fog added an element of uncertainty to increase the interest.



The racers. In center, Ilys, the winner; above on left, Sybilla II; on right, Mariada. Below on left, Caliph, and on right, Isabella II.







Snap Shot III on her trial trip. She attained a speed of about eleven miles an hour with but very little disturbance. On the left is shown the roomy, undivided interior of the cabin, and on the right, her 36 h. p. Van Blerck motor.

Snap Shot III, A New 40-Footer.

A Husky Little Cruiser That Was Designed With An Eye on the Long Distance Races. The Simplicity of Her Interior—A Step in the Right Direction.

SNAP SHOT III, illustrated on the page opposite, is one of the most interesting of the season's medium-sized boats. She is a 40-footer and was designed by Southmayd Hatch, of 1328 Broadway, New York City, for Mr. J. B. Lindermann, of the Colonial Yacht Club, who specified a boat of exceptional seaworthy qualities, fair speed and good cruising accommodations, so that she might be used either as an ocean racer or a cruiser.

The general form of the hull shows a fair underbody with considerable deadrail and pronounced flare forward, which makes a graceful bow and adds considerably to the deck space at this point. The bridge deck is reached by a companion at the forward end of the cabin, and both the boat and engine are controlled entirely from this position, and, as the engine starts on compression, a man in the engine room is not needed.

The arrangement plan is exceptionally simple, the intention being to afford the maximum cabin room, and for this reason, practically the entire space beneath the trunk has been thrown into one large cabin, which may be sub-divided by portieres into several staterooms.

Aft of a watertight bulkhead forward is the engine room with full head room, and is large enough for two pipe berths and a work-bench. The motor is a six-cylinder 36 h.p. Van Blerck with Bosch dual ignition system, water-cooled exhaust, air pump and automatic oiler. An Apple dynamo of the friction type and a storage battery furnish the current for lighting the boat throughout, including the anchor and running lights. Two ten-gallon tanks are also installed in the engine room, one for lubricating oil, and the other for alcohol to be used in the galley stove. These tanks are filled from the bridge deck.

A door connects the engine room with the main cabin, the latter being fitted with four transoms with drawers beneath. Each of the back cushions covers a pipe berth that may be raised and hung from the cabin beams, thereby furnishing sleeping accommodations for eight persons. A buffet and locker occupy the after part of the cabin on either side, and aft of these on the port side is the galley, with a large icebox under the after deck and the usual fixtures. A toilet-room occupies the corresponding space to starboard.

The after deck is reached by a passageway between the toilet-room and the galley, and as will be seen from the photograph, this deck is large enough to acccommodate quite a party.

It will be seen that the sides of the cabin-trunk are fitted with alternate round ports and stationary windows of heavy, bevelled, French plate glass, and with the ports and the companion slides both open, a good circulation of air is obtained.

Water tanks with a combined capacity of 100 gallons are installed beneath the cabin floor, and are so arranged that pressure from the air pump on the engine forces the water to galley and lavatory. Two tanks of 150 gallons' capacity, installed under the after deck, give the boat a cruising radius of 400 miles.

In construction Snap Shot III is exceptionally heavy. The keel, floors, the keelson, the garboard and the deck beams are all of white oak, and the bilge stringers and clamps are of yellow pine. The planking is of Southern cedar below the water line, and white pine above The cabin, both inside and out, is finished in selected mahogany. The cabin roof is of cypress, and the beams are of red gum wood, making a pleasing combination. The stem is a natural crook of chestnut.

A military mast of sufficient size and strength to carry a small sail is shipped on the cabin-trunk, aft of the stack, which is used as a receptacle for the whistle tank, life preservers, etc.

One feature of the boat deserves particular attention, as it might be of service to many other motor boat owners. This is the gasoline feed. A tank of about 1 gallon capacity is placed near the engine and fitted with a drain at the bottom. The supply is fed into the tank three inches from the top, and the outlet to the engine is three inches from the bottom. There are three reasons for such an arrangement: sediment is drained from the bottom; floating matter in the gasoline is taken from the top, and no amount of pitching will affect the supply of fuel to the engine.

Snap Shot III has now been in commission for several weeks and has proved thoroughly up to the expectations of her owner and designer. At all speeds there is a very noticeable absence of vibrations and wave making, and she should prove worthy a place in any of the races in which she will be entered by her owner.

The New York-Camden Race.

Something About the Organization That Is Planning to Make the Race the Biggest Ever. The Course and the Conditions Governing the First Annual Contest.

SUBORDINATING the entire August schedule of events on the racing program, the Camden Motor Boat Club is bending every effort in promoting the New York-to-Camden Motor Boat Races on August 4th. In their efforts to make it one of the greatest yachting features of the season on the Atlantic coast their purpose is not only to swell the entry list, but to assemble a flotilla of sea-going yachts to receive the navigators who will share in the honors of the day in making a race which will combine every phase of navigation.

Coincident with the event, a word in connection with the history of the Camden Motor Boat Club at this time is perhaps not out of place. The organization is not yet four years old, or to be exact was organized in December, 1907. As is so frequently the case, the club was organized with no thought of becoming a leader in aquatic events, but simply the gathering together of a handful of local yachtsmen who, at the time, had no thought of ever attaining the magnitude in motor boat affairs that the organization takes at the present time.

Scarcely had the organization become perfected before things began to happen, and the promoters saw the possibility of its becoming a factor in the promotion of the sport. Awakening to the possibilities the club began to increase in membership, and with the increasing of numbers the increasing in vigorous action in motor boating affairs followed. The success of the Holly Beach-to-Camden races of last year spurred them to still greater action for a race embodying in its course all the skill of navigating waters calculated to tax the skill of the skippers on sea, bay and river navigation.

Their purpose in inaugurating the race scheduled for August 4th is to make it an annual event, calculated to enlist the attention of motor boat enthusiasts and of all yachtsmen within reach of Atlantic Coast waters. As such the committee feels that there is no course so attractive to the navigators as the one chosen for this race. That this is true is betokened by the number of entries received for the coming contest.

The race as planned, and under the rules formulated is for cruising boats of not less than thirty feet over-all length, and not exceeding in the greatest length fifty feet over-all, and with waterline breadth of not less than one-fifth of the waterline length, and enrolled in any recognized club. A cruising boat is defined as one used for cruising, and having a raised foredeck or trunk-cabin and self-bailing cockpit. The cabin must contain sleeping, cooking and general living accommodations for the crew.

Trophies to be competed for in the New York City-Camden, N. J., motor boat race on August 4th.

The course will be from the New York Motor Boat Club, New York; down the Hudson River to New York Bay, passing Sandy Hook, Barnegat, Atlantic City and Cape May to the Delaware Bay; thence up the Delaware River to the Camden Motor Boat Club, Camden, N. J., a distance of 225 nautical mlies.

Following the warning signal at 9:50 a.m., followed by the preparatory signal, the starting signal of one gun will be given at 10:00 a.m., August 4th. Boats must finish within forty-eight hours after start, when race will be called off.

Entries closed on July 22nd. All boats entered must report to the regatta committee at the New York Motor Boat Club, not later than 6:00 p.m. on August 4th. The committee reserves the right to reject any entry.

All boats will race under one class, and will be rated under the 1909 American Power Boat Association rules. No unrated boat will be allowed to start.

All boats must be measured jointly by the official measurers of the two clubs. During the race only amateurs will be allowed on the boats, and the crew of each boat shall consist of no less than four persons. In the event of the owner not being aboard during the race, he must be represented by a member of a recognized club.

AMONG THE CLUBS.

The Motor Boat Club of Buffalo's International cruiser race was a 443-mile run from Buffalo to Sandusky, O., and return. The race was open to seaworthy motor cruisers not over 90 feet and not under 30 feet over all length, and the prizes were $500 to the winner, $150 second prize, and $100 third prize.

The Astoria Motor Boat Club, Astoria, Oregon, has issued the following revised program of sports to be held at the Centennial celebration, the motor boat races to be held Sept. 4th to 9th inclusive:

Sept. 4th, 5th, 6th—three heats for 26-foot class boats, 15 miles each; first prize, $700; second, $200, and third, $100.

Sept. 4th, 5th, 6th—three heats, 32-foot class, 20 miles each, first prize, $400; second, $200; third, $150.

Sept 4th, 5th, 6th—displacement, free-for-all, three heats, 30 miles each; first prize, $1,000; second, $750; third, $250.

Sept. 7th, 8th, 9th—free-for-all handicap, no boats making less than 15 miles allowed to enter; three heats, 10 miles each; first prize, $250; second, $125; third, $75.

Sept. 7th, 8th, 9th—free-for-all, Pacific Coast championship race, three heats, 30 miles each; first prize, $1,650; second prize, $825; third prize, $525.

There will also be several races for fish boats, cannery tenders and work boats, distances ranging from 5 to 10 miles, and purses amounting to from $100 to $300.

The Louisville Motor Boat Club, Louisville, Ky., recently held its first annual meeting and elected officers for the ensuing year as follows: Charles C. Walker, commodore; James E. Howard, vice-commodore; H. Warner, secretary; E. L. Niman, treasurer. The board of trustees consists of Dr. Allen Voires, J. Leschinski, Helm Walker, Dr. Witherspoon and Mr. Schnarenberg.

Cleveland Power Boat Club, Cleveland, Ohio. The 1911 year book at hand. It contains a list of officers, racing rules for the coming season, racing schedule for 1911, list of members and the laws regulating the equipment of motor boats.

The New York Motor Boat Club, New York City. Eleven motor boats started in the handicap race to Tarrytown and back, a distance of 32 nautical miles. All finished but one, and the race was won by Rex, owned by H. J. Allen, elapsed time, 5-30-50; second. Monreve, owned by E. E. Barney, elapsed time, 3-55-52; third, Arlington, owned by J. Clipper, 4-22-38. Handicapping was done on the past performances of the boats, and as an indication of how well this work was done, five of the boats finished within ten minutes of one another.

Spring Lake Motor Boat Club, Spring Lake, Mich. Opened its 1911 racing season with a well contested and attended regatta. Handicap races were run off in classes B, C and D and the results were as follows: First and second in class D were won by the two boats owned by Chauncey M. Blakeslee. Class C race was won by Dorothea, owned and driven by George A. Kusterer. Class B won by Skootee, driven by Miss Ruth Peabody. This boat ran aground but Miss Peabody and her passenger, Miss Sarah Dunberry, leaped into the water, pushed the boat off and continued the race, winning it. In class B the first place was taken by Glenora and the second by E. A. Clarke's Leotta. After the regular racing card had been run Skootee ran a match race with Patrice II, Skootee winning by over two minutes.

Egg Harbor Yacht Club, Rockaway Beach, Long Island. The race held by Egg Harbor Yacht Club on July 2nd was the first of four races, the remainder of which will be held on August 6th, September 3rd and September 17th, and the boat scoring the greatest number of points in all the races will be awarded the Commodore Trophy. The course is 5½ miles and the July 2nd race was won by Ethel, F. Grundy; elapsed time, 31:55; corrected time, 31:55. Second, Mariner, John Miller; elapsed time, 35:45; corrected time, 32:15. Third, Greenie, Fred Fiske; elapsed time, 37:10; corrected time, 33:10.

Monongahela, Pa. The motor boat enthusiasts in this vicinity have lately banded together and elected the following officers for their new club: Commodore, Henry Louttit; vice-commodore, Claire Shepler; secretary, Averill Williams; treasurer, August Jonas.

The Long Beach Motor Boat and Yacht Club, Long Beach, N. Y., have just completed a new clubhouse 200 feet from the Long Island railroad bridge. This is a new club, and is headed by Commodore Lawrence Perry. It held its initial regatta on July 15th, and the race for boats 40 feet and under with a speed of not less than 20 miles an hour for the South Shore Motor Boat challenge trophy, was the principal feature of the meet. This trophy must be won three times by the same yachtsman before it becomes his permanent property.

The Casco Yacht Club, of South Freeport, Me., held its annual meeting a short time ago, at which the following officers were elected for the coming season: Commodore, L. G. Cushing; vice-commodore, A. H. Torricelli; secretary, H. R. Alden; treasurer, W. H. Soule.

The Colonial Yacht Club, 138th Street and Hudson River, N. Y., announces the following winners of its annual race around Manhattan Island: C. F. Stone's Scotland, first; Capt. H. M. Betts' Virginia, second. The club's annual cruise around Long Island also took place a short time ago. The membership of this club has increased so rapidly that it has been necessary to form a waiting list. Charles M. Hilliker is commodore; James A. Donigan, vice-commodore; Dr. N. J. Baker, rear commodore, and Franklin Pratt is fleet captain.

The Flushing Bay Motor Boat Club, of Queens, L. I., has been incorporated with the Secretary of State, with the following initial directorate: Henry Jost, Henry H. Hagen, Nicholas Schwartz, Jack Nelson, all of New York City, and Jeremiah McCarthy, of Laurel Hill.

The Corinthian Yacht Club, of Marblehead, Mass., has signified its willingness to take charge of the finish of the power boat race from Huntington, L. I., to that place. It is expected that there will be more than a score of starters, for, at this writing, entries have already been received from the N. Y. Motor Boat Club, Yonkers Yacht Club, and the Motor Boat Club of America.

The Atlantic City Motor Boat Club, in Venice Park, opened its new club house on June 23rd. Three motor boat races were run in the afternoon and a banquet and ball were given at the club house in the evening.

The Sea Cliff Yacht Club, Sea Cliff, L. I., Officers recently elected for the coming year are as follows: Commodore, David G. Evans; secretary, Edward J. Hogan; treasurer, Charles E. Robinson. Trustees elected to act one year: Arthur Joel, John Robinson, Oscar Schultz, Henry Van Dyne, Frank J. Ruhlman and William Porter.

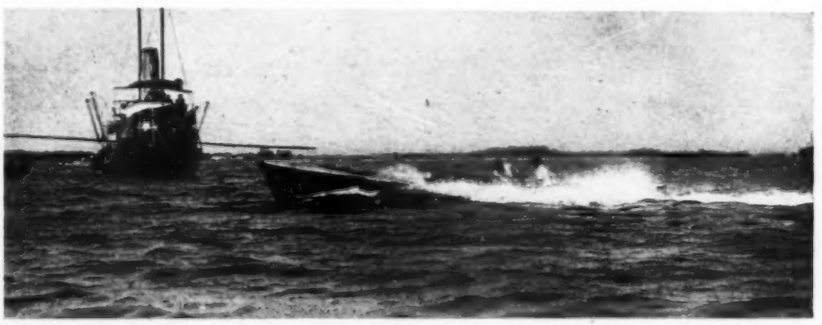
The N. Y. Motor Boat Club's third annual race for motor boats over a course of over 235 nautical miles, New York City to Albany and return, was held on July 1st. There were 29 entries for this event, which is strictly an amateur contest, and the following boats were the victors: Mon Reve, belonging to E. E. Barney, first; Respite, belonging to Dr. V. C. Pedersen, second; Excelsior, belonging to Thomas Trolsen, of the Excelsior Yacht Club, third. See photographs of Mon Reve and Respite on page 44.

Cambridge Yacht Club, of Cambridge, Maryland, has attained a membership of 250 since its inception a few months ago. Its recent first regatta was an event which drew craft from all corners of Chesapeake Bay. The contests were a race between two Chesapeake bugeyes, the "Mollie V. Leonard" and the "Margaret A. Travers" over a 36-mile course, and was won by the former boat; in the motor boat class race the hydroplane "Sand Burr II" was the victor; in the handicap events it is believed that "Louise" and the "Evelyn N" will receive trophies. Several other events, including the race for power boat cruisers, free-for-all speed boat race, tub race and two sailing races, concluded the day's meet.

The National Yacht Club, Brooklyn, N. Y. The annual race to Cape May for power and sail boats was started off the clubhouse pier on July 1st. For lack of entries no sailboats competed. It is over a course of 318 miles and the power boat division is open to craft from 40 to 80 feet overall length under the rules of the American Power Boat Association. "Ilys," belonging to Commodore J. G. N. Whitaker, of the Yachtsmen's Club of Philadelphia, was the winner with elapsed time, 35 h. 36 min; corrected time, 31 h. 15 min. 30 sec. "Caroline," belonging to M. Frank Dennis, of the Columbia Yacht Club, came in second; "Califf," belonging to M. E. Brigham, of the Ventnor Yacht Club of Atlantic City, third; "Canadice," belonging to R. S. Mills, of the National Yacht Club, fourth, and "Sim Too," belonging to Vice-Commodore A. C. Soper, of the National Yacht Club, last.

Chippewa Yacht Club, Thousand Islands, have just issued a booklet containing a list of its officers, members and boats of the club. C. M. Englis is commodore; W. H. Post, vice-commodore; Hon. E. B. Hawkins, rear-commodore; J. G. Knap, secretary-treasurer; S. G. Averell, measurer.

Norristown Motor Boat Club, Norristown, Pa. The July 4th regatta of the Norristown Motor Boat Club furnished a new world's record for the mile for speed boats rated by the American Power Boat Association for boats of 25 feet and under. This record was made by P. V. Hoy's "Pee Vee Ho" in 1 min. 45⅖ sec., beating the former record of 1:46 made by Emerson Engine Co. at Washington, D. C.



Evelyn M. winning the club championship for speedboats at the first regatta of the Cambridge, Md., Yacht Club.

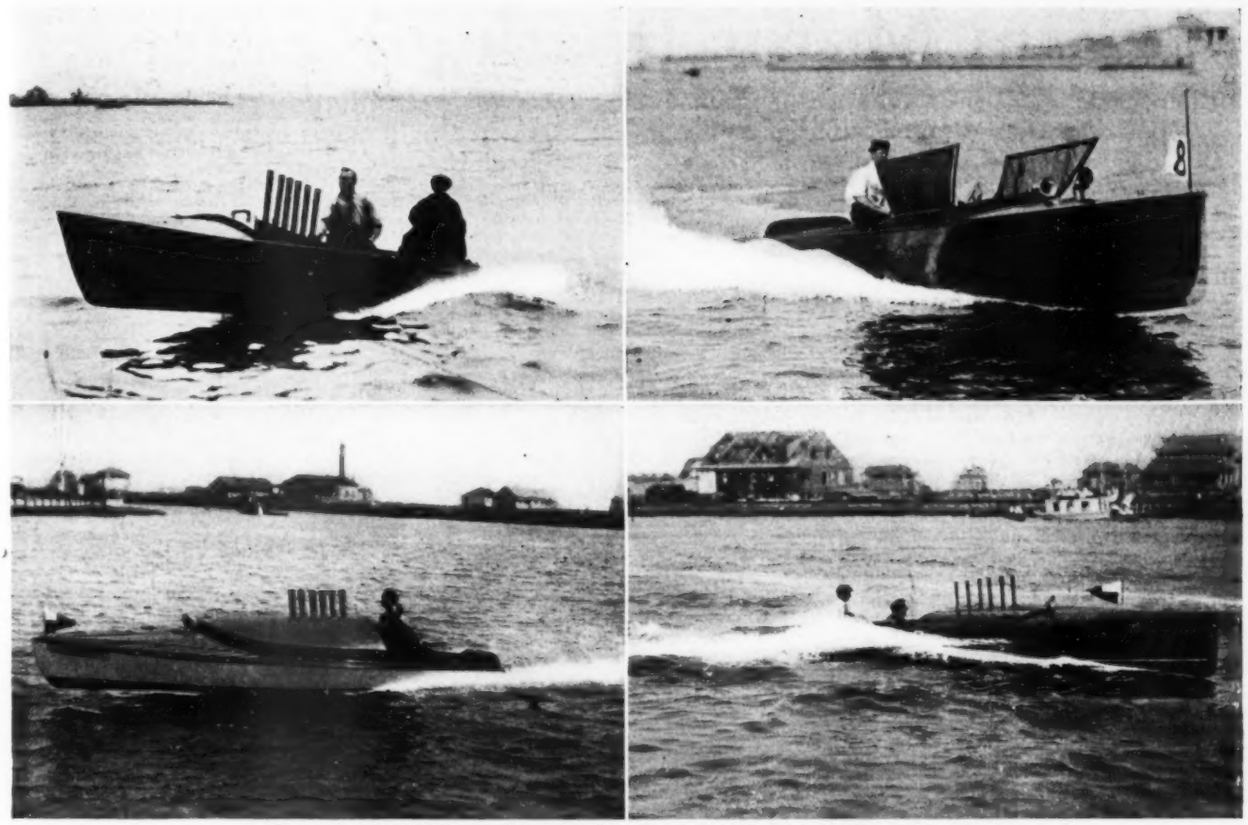
Summary:

Rating 35 and under. 2 miles.

			Elapsed.	Corrected.
1.	Frances	E. Allerton	19.43	17.58
2.	Sequoyah	F. C. Wanner	19.39	18.35
3.	Bella	Wm. Jackson	19.51	18.38

Rating 35 to 50., 4 Miles.

1.	Elizabeth	H. K. Bussa	24.07	19.50
2.	Eva	E. T. Herdman	24.09	22.18
3.	Kid	E. S. Nyce	25.15	25.11



Some remarkable boats—Pee Vee Ho, Sand Bur II, Elmaja II and Vanish.

Above on left, Pee Vee Ho, the little 22-footer owned by Mr. P. V. Hoy and built from Pioneer K. D. frames by Lee Templeton. She is equipped with a 100-120 H. P. Emerson engine and recently, at Essington-on-the-Delaware, did 12 miles in competition at better than 29 miles an hour. Below on left is Sand Burr II, a 20-footer that won three races recently at Cambridge, Md. at the rate of 36 miles per hour. She belongs to Messrs. A. K. and C. D. White, of Atlantic City, and is also equipped with an Emerson engine. The boats on the right are Elmaja II above, and Vanish, below.

Summary.

Rating 50 to 70. 6 Miles.

		Elapsed.	Corrected.
1.	Teddy R.....W. P. Gresh.....	26.26	24.52
2.	Bee.....Wm. T. Kelly.....	28.50	26.52
3.	Comet.....T. J. Jamison.....	30.17	30.17

Rating 50 to 70. 8 Miles.

		Elapsed.	Corrected.
1.	Pee Vee Ho....P. V. Hoy.....	17.10	17.10
2.	Ace of Heizts...J. H. Rex.....	25.29	21.19

The New York Athletic Club conducted its fourth annual race for cruisers from 25 to 40 feet for the Thomas Fleming Day cup, known as the Block Island Race, on June 24th. The course was from Whortleberry Island to the West Harbor of Block Island, a distance of 100 nautical miles. The race resulted as follows:

		Elapsed Time.	Corrected Time.
1st:	"Ruth II." W. F. Burrough..	12.45.20	7.3.23
2nd:	"Elizabeth," L. D. Huntington	12.40.25	7.17.52
3rd:	"Classic," James Craig.....	12.41.20	7.39.07
4th:	"Thistle," J. H. Wallace.....	10.50.00	8.17.23
5th:	"Respite," Dr. E. C. Petterson.	11.37.45	8.30.27

See photographs on page 48.

Tarrytown Boat Club, Tarrytown, N. Y., held a successful regatta on Independence Day. The feature of the programme was the handicap race over the club's triangular course for the Commodore's cup, which resulted as follows: First, "Florence M," A. J. Cureau; second, "Roy," Edward Dannern; third, "Phi," Crocker Brothers.

Pistakee Yacht Club, Pistakee Bay, Ill. On July 4th the Pistakee Yacht Club held its special handicap race, a free-for-all event, which was won by "Sentinel," owned by Miller Brothers, with Gerding's "Eda" second. The class A race held on July 2nd was also won by "Sentinel," and the class B race on the same day won by "Dorothea," Dr. Rhinehardt.

Independence Day Regatta of the Savannah M. B. C. The Savannah Motor Boat Club's main event in its regatta held on July 4th was the endurance run at Isle of Hope, which was won by Swan, owned by L. C. Aveilhe and E. Harman, with a score of 99¼ points. The first club prize was won by A. D. Hancock's XPDNCE, which scored 97 points. A so-called plank race in which the contestants had to round a buoy and returning pick up two numbered planks, the numbers having been given to each boat in a sealed envelope before starting, was won by the Haas, the boat entered by B. B. Bostick.

The New England Engine and Power Boat Association, Boston, Mass. The fifth annual championship races of the New England Engine & Boat Association were held in Boston Harbor on July 4th. While the races were open to all power boats for which there were classes, the championships were awarded only to New England owned boats. The course of all the races was from Dorchester Bay to the City Point Life Saving Station, where the judge's boat was stationed. The summaries of the races are as follows:

Class "C."

	Boat.	Owner.	Corrected Finish.
1.	Pegasus II.....L. R. Cogswell		11-18-13
	Mebbe*.....J. E. Alexander.....		11-30-7
2.	Hermes.....Roger L. Putnam.....		11-32-5
3.	Race.....Lloyd P. Miller.....		11-40-38

*Disqualified for going wrong course.

Class "D."

1.	Chum.....M. B. Small.....	12-6-32
2.	Pickaninny.....A. P. Homer.....	12-11-7

Class "F."

1.	Beachcomber.....Peterson & Shepard....	1-59-3
2.	Johareth*.....Jos. Fahey	1-59-12
3.	Quookh.....J. N. Chute.....	2-1-25

Class "G."

1.	Bazoo.....Edw. Lieneman	2-55-26

Other three entries withdrew.

Class "H."

1.	Sigma*.....John J. Connors.....	3-9-11
2.	Alma.....J. Jefferson	3-32-22

Class "I."

1.	Spark.....F. L. Ortla	4-20-0
2.	Anabel*.....Jas. E. Farrel.....	4-31-15
3.	Chug.....Walter H. Chute.....	4-32-45

Class "B."

1.	Kajoruna.....C. W. Kinsella.....	4-16-10
2.	Pegasus II.....L. R. Cogswell.....	4-28-15
3.	Chum.....M. B. Small	4-56-35

*Penalized for exceeding stated speed.

The Waterways League of New Jersey held its first annual cruise on June 17th and 18th, and were entertained by the Waterways League of Greater New York and Long Island in Jamaica Bay at the Bay View Yacht Club and other club houses in that vicinity.

Mahopac Boat Club, Lake Mahopac, N. Y., had its first birthday on July 18th. This, we understand, is the first power boat club on this body of water and its progress during its first year of existence is said to have been more than satisfactory. A series of regattas has been arranged for the coming season and it is expected that many interesting races will be run between the fifty odd boats owned by members of the club. The officers of the club are: George C. Pennell, commodore; Ferris Faulkner, fleet captain; James O'Connor, secretary; Clarence A. Pitman, treasurer; William Chilvers, additional member of board of officers, and James O'Connor, chairman of race committee.

The Lake Champlain Yacht Club, of Burlington, Vt., will hold its annual regatta on August 1st at Burlington on Lake Champlain. Entries close on July 31st, and no entrance fee is charged to the contestants. Eight motor boats and three sailing races constitute the racing program for the day. The late closing date for entries and no fees are for the purpose of inducing those who will cruise through that section at that time to enter into the competition.

The Terre Haute Motor Boat Club, of Terra Haute, Indiana, held its annual season opening race on June 10th, which was in charge of a race committee composd of E. Tetzel, fleet captain, Emmet Brown and James Misner. This club was organized March 12, 1907, and has at the present time eighty-eight enthusiastic and active members. The officers are: Commodore, George W. Krietenstein; vice-commodore, E. H. Craig; secretary, Charles L. Pulliam; treasurer, E. J. Levering; fleet captain, Ed. Tetzel, Jr.

Lake Whatcom motor boat races on Lake Whatcom, Washington, held on July 4th, resulted as follows:

Race A—Free-for-All—Start 1:19:30. Nahua I, Kent-Marvin company, finish 1:25:30; first prize, E. W. Purdy cup and $25 cash prize; Hummer, F. W. Burpee, finish 1:26:03; second prize $15 cash.

Race B—Free-for-All—Start 2:15:25. Nahua I, finish 2:31:55; first prize E. B. Deming cup and $25 cash; Hummer, finish 2:32:08; second prize $15 cash.

Second Heat Purdy Cup—Start 3:25:30. Nahua, finish 3:41:30; Hummer, finish 3:42:20.

Race C—Bloedel Handicap for Boats Twenty Feet and Under. Will He Run, start 3:54:46, finish 4:37:20; first prize, J. H. Bloedel cup and $25 cash; Merry Widow, start 3:34:20; finish 4.37:25; second prize $15 cash.

Second Heat for Deming Cup—Start 4:55. Nahua, finish 5:11:50; Hummer, finish, 5:12:01.

From Motor Boating Readers.

A Department for the Exchange of Ideas and the Discussion of Questions of General Interest. Editorial Opinion on a Number of Questions Submitted by Readers of the Magazine.

MoToR BoatinG's columns are open to its readers, not only for asking questions, but for placing before other readers ideas, results of experience, opinions, etc., that should be interesting or helpful to them; but the editor will not, of course, be responsible for any opinions expressed or statements made in such communications. The name and address of the writer must necessarily be given in every case to make an answer by mail possible (no anonymous contributions will be considered for publication), but names will be omitted in publishing the letters and answers where desired, in which case it is desirable that initials or other distinguishing signature be appended. Through the correspondence department readers of the magazine may be of direct aid to one another in solving the problems of motor boating.

Building the 22-Foot V-Bottom.

To the Editor of MoToR BoatinG, *Sir:*—

I should write you regarding MoToR BoatinG, and the pleasure I get out of it. Last March I went on the road for the company I work for—and was waiting for a train at Detroit (where I had to change cars to reach my destination) when I spied MoToR BoatinG in the news rack. Now, as I had and always will have a liking for boats, I thought I would get one, and then I couldn't rest until I had read it from cover to cover. The next thing was my subscription, beginning with the April issue, I believe, and since then I receive my copies regularly.

In the April number you gave plans for building a 22-foot V-bottom boat. As I had long been thinking of building a V-bottom boat, this number, or article, rather capped the climax and I got the bug right then. I had to send about 30 miles after the right kind of material which spoiled a week's work, but I finally got the material and then something else came to light which resulted in four weeks lost time. I had the material in the shop, 18 x 30 ft., with lots of room—and smallpox at home. There I was, boat one place, I another—just about the limit.

Well, at last I got started again, and have worked rather regular on it every night since then. While I was in Detroit I bought a 5 h.p. engine for almost a song, and at the present time I have her nearly ready for trial. My whole outfit is going to cost me less than $75, and I got a new engine at that. I am enclosing a picture of the hull as it looked while I was building it. I'm just a kid, but I use lots of ambition and common sense and get along fairly well. When I launch her I will write you again with another photo.

GLENN J. McQUEEN, Hudson, Mich.

Building the 22-foot V-bottom.

Picric Acid In Fuel.

To the Editor of MoToR BoatinG, *Sir:*—

I have heard several times of motor boatmen putting picric acid and ether in the gasoline to give more power to their engines. I have never seen this done, and would like to know your opinion on the subject.

What I want to know, is this: will either of these ingredients, when mixed with the gasoline, give more power and speed? Is it harmful to the engine or the gasoline tank to use these ingredients? What are the proper amounts to get the best results?

L. P., Kankakee, Ill.

[Picric acid and ether are frequently used in the gasoline to increase the power of the motor, but we are not inclined to recommend the practice. Picric acid is used by dissolving the crystals in the gasoline and is apt to gum up the needle valve of the carbureter, but this is merely a minor argument against its use. Ingredients, such as picric acid, ether and ammonium nitrate increase the power of the engine by liberating in the heat of combustion or carrying into the cylinder additional oxygen, and this very fact is the principle argument against their use, as pitting of the cylinder walls and valve seats is likely to result through the oxidation of these parts. As to the actual proportions, we have no figures.—ED.]

The Use of Flags.

To the Editor of MoToR BoatinG, *Sir:*—

In your valuable paper that I have been reading for some time, in speaking of flag etiquette you always express the opinion that no two flags should be shown from the same mast.

I have a full cabin cruiser, 42 ft., with a flag pole on the bow and a flag pole on the stern. I am an officer of a local club which belongs to an association of motor boat clubs. I have a flag for both the club and the association, also an officer's flag with the name of my boat on and my private signal flag.

Now, then, when I am traveling in the waters under the jurisdiction of our club, what flags are permissable to fly on the bow staff? Then, if I move into the waters of the association, or of other associations, should I change my flags? Isn't this a case where two flags should or can be shown so as to designate whether or not I am an officer, also to designate the club or clubs to which I belong?

E. W. H., St. Louis, Mo.

[It is a hard and fast rule that not more than one flag should be flown from the same hoist, except, of course, code flags. The only flag ever flown from the taff-rail or stern flag staff is the American Yacht Ensign. In local waters you should use either your club flag or your officer's flag on your bow staff—there is no place for any other. In going into the other waters you mention, you can use either the club flag or the association flag as you prefer.

But the solution of your problem is to add a signal mast with a yard arm. It need not be a large one. Then, in local waters, you can fly the club flag at the bow, the private signal at the top on the signal mast, and your officer's flag from the starboard yard arm. There is a difference of opinion as to whether the private signal should be used when the officer's flag is flown, but usage (which, of course, is the basis of flag etiquette) seems to sanction the use of both.

Flags with names of boats on them are not nautical, and should not be used on the boat. We would advise you to use that one as a cabin ornament, or in your club or your home.

Now, when you go into the association's waters, keep the same arrangement of flags, or substitute the association flag for your officer's flag if you choose. You should not use the association's flag and your officer's flag together, because you are not an officer of the association.—ED.]

Again, The V-Bottom.

To the Editor of MoToR Boating, *Sir:*—

I have been engaged since I bought the March number in building the 22-foot V-bottom runabout described therein. The description leaves little to be desired, but I wish to impose on you to the extent of asking if an 8 or 10 h.p. double-cylinder motor would be suitable power, and if so, what engine speed and weight would give the best results; also the size of shaft and propeller wheel.

JOSEPH F. WEYAND, Hartford, Conn.

[An 8 or 10 h.p. motor would be thoroughly suitable for use in the V-bottom 22-footer in question. This should by all means be of the medium duty type, unless your boat is an exceptionally light one, and to be used principally for racing. By medium duty we mean of the average weight and developing its rated h.p. at from 500 to 700 r.p.m.

A 10 h.p. motor would require a propeller of
20 in. x 26 in. for 500 r.p.m.
20 in. x 20 in. for 600 r.p.m.
16 in. x 24 in. for 700 r.p.m
and an 8 h.p motor would require one of
20 in. x 20 in. for 500 r.p.m
16 in. x 24 in. for 600 r.p.m.
16 in. x 20 in. for 700 r.p.m.

The shaft need not bother you; the one supplied with the engine will be plenty large enough as they are always made greater in diameter than necessary for strength.—ED.]

Choosing the Right Propeller.

To the Editor of MoToR BoatinG, *Sir:*—

I have read with much interest the article, "Choosing the Right Propeller," in the June issue of MoToR BoatinG. In the example given by the author at the end of the article, what would be the effect on the speed of the

boat if an engine developing 9 h.p. at 900 r.p.m. was used? H. M. CORSE, Columbus, Ga.

[The result would be as follows: Substituting 900 for 450 in the equation

$$r = \frac{450}{(7.8)^2} \times \frac{9}{7.8} = 7.9$$

is the same as dividing the result, 7.9, by the original 450 and multiplying by the new 900. This gives 15.8 as the new value for r. From table (I), therefore, the slip is found to be 36%, somewhat greater than in the original problem, and the efficiency is found to be 58%, somewhat less than the original value. From table (II) the pitch ratio is found to be .88 and r, 1870. Therefore, from equation (III) the diameter equals

$$\frac{1870 \times 7.8}{900} = 16.2$$

and the pitch equals pitch ratio × diameter or .88 × 16.2. = 14.3. It is seen, therefore, as would be expected, that both the pitch and diameter are less when the same h.p. is developed at a greater r.p.m.—ED.]

H. P. According to A. P. B. A. Rules.

To the Editor of MoToR BoatinG, *Sir:*—

I am about to enter a race. I carry a 12-horse Lathrop engine, make and break, bore 5½-inch, stroke 6½ 450 r.p.m., 2-cycle. I would like to find out how many horse-power I would be rated according to the American Power Boat Association rules. T. B. W.,

New York City.

[The horse-power will depend upon whether your boat is of the "automobile type" or not. Since your engine turns at 450 r.p.m and is of the make and break type, your boat is probably not of this class.

The formula is as follows—for engines whose stroke is above 6 inches:

$$H.P. = \frac{A \times N}{C}$$

where A equals area of one piston in square inches; N the number of pistons receiving direct explosions; C for "automobile" boats equals 2 for 4-cycle engines, and 1.6 for 2-cycle engines. In all other boats the h.p. is taken at ⅔ of that given for automobile racing boats. This will enable you to determine the rating of your boat.—ED.]

Viper Versus V-Bottom.

To the Editor of MoToR BoatinG, *Sir:*—

We are endeavoring to obtain a fast 20-foot boat and have two designs under consideration and wish your opinion of both. The designs are: First, Mr. W. H. Hand's 21 ft. V-bottom Hydroplane, and second, the Viper, designed by the Viper Co. The power is to be furnished by a 36 h.p. Termaat & Monahan motor, 4-cylinder, 4 15/16 x 4¾, and weighing about 550 lbs.

Which, in your opinion, will prove the fastest boat, and what speed would you estimate for each of them?

NIMAN BROTHERS, Louisville, Ky.

[We believe that you could obtain a slightly greater speed with the Viper model than with the V-bottom, although the latter, if properly designed and constructed, is itself quite fast. This speed would be obtained, however, at a sacrifice of seaworthiness, as the Viper cannot compare in this respect with the V-bottom model.

With the 36 h.p. motor you propose installing, you might obtain as high as 25 miles per hour with the Viper model, under the best conditions.—ED.]

From the Wheel of Eugenia.

To the Editor of MoToR BoatinG, *Sir:*—

Thinking that you may be interested I am writing you this note in regard to the ocean race of the Yachtmen's Club of Philadelphia. It was my first experience in ocean racing or cruising, having never been outside of Delaware Bay before in my boat; furthermore, I had dône no chart or compass work, and my entire knowledge of the subject was gained through the articles in MoToR BoatinG, and your little book, "From Novice to Pilot." My three companions likewise had never done any boating except on the quiet waters of the Schuylkill River.

While we were all fresh-water "salts" we went into the race with a "Spirit of '76."

EUGENE SWAIN, Philadelphia, Pa.

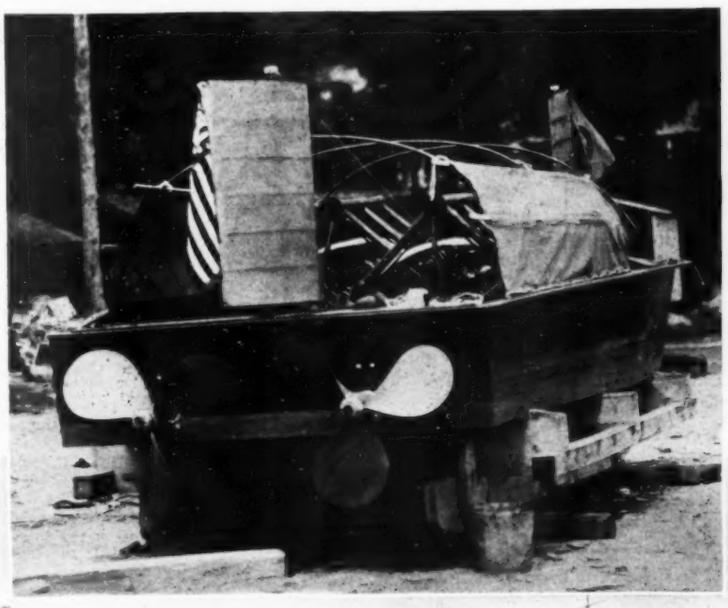
[It will be remembered that Dr .Eugene Swain is the owner of Eugenia, the smallest boat that competed in the ocean race of the Yachtmen's Club of Philadelphia. She is only 30 feet in length, and the sea was running to such an extent before the start that Dr. Swain was warned not to attempt the course of 230 nautical miles. He started, however, and although unfamiliar with the course to Fire Island, he piloted the boat himself by the use of charts, and was at the wheel for thirty-five consecutive hours. Eugenia reached Fire Island safely, but on the way back to Atlantic City tne fog encountered and trouble caused by sediment in the gasoline, caused her to lay up for several hours. We congratulate Dr. Swain for the masterful way in which he handled the boat, and are gratified at his keen interest in MoToR BoatinG.—ED.]

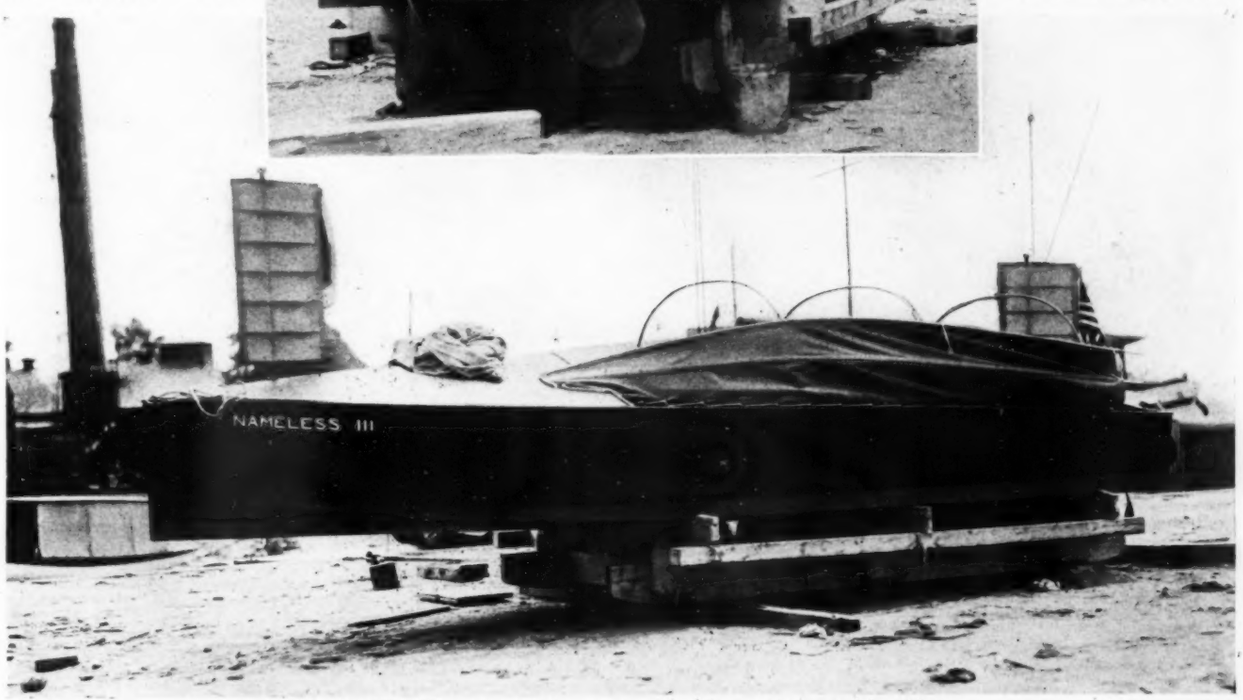
A Comment on Carbureters.

To the Editor of MoToR BoatinG, *Sir:*—

In answer to the inquiry of Wm. Oleson on page 44 of your June issue, you give a formula for working out the area of the inlet of a gasoline motor.

(*Continued on page 60.*)





Nameless III. Note the position of the propellers and the aerial rudders.

New Things for Motor Boatmen.

New Attachments and Accessories That Are Offered to the Man With a Boat. The Month's Production of Devices Designed as Aids to Motor Boating.

[Under this heading will appear each month descriptions and, whenever possible, illustrations of the various devices designed to add to the pleasure and comfort of motor boating which have been brought out since the previous issue. It should be kept in mind that the department in any one issue is, as it were, only one month's installment of the many useful things on the market, and that it will be well to consult the previous issues of MOTOR BOATING which will form, together, a very complete illustrated directory of the things the motor boatman needs. —In writing the makers of the articles shown, if our readers will mention MOTOR BOATING they will receive special attention.]

Krause Constant Carbureter.

The principal feature of the carbureter, made by the Krause Constant Carbureter Co., 1316 Addison Road, Cleveland, O., is its freedom from the necessity of adjustment, as it may be screwed tight to the manifold and when the hand-operating mechanism is attached the instrument is ready to operate. Each of the valves surrounding the nozzle is of a different weight and the holes in these increase in diameter so that the velocity of air is kept between the limits for a proportional mixture around the nozzle for all running conditions of the motor. As the throttle is opened the suction of the cylinders raises one or more of the valves and gravity takes one or more back to place when the motor is slowed down, according to the demands. All air enters behind the nozzle, securing a homogeneous mixture. The richness of the mixture is fixed by the relative proportions of the areas between the jet opening in the nozzle and the surrounding air opening.

* * *

"The Cruise of the Snark."

A 340-page book by Jack London has just been published by the MacMillan Company, 66 Fifth Avenue, New York City, giving the true account of the cruise of the 43-foot ketch-rigged craft equipped with a 70-h.p. auxiliary. The cruise lasted two years and was undertaken for the love of the sport, although Mr. London had an agreement with a magazine to write a 35-thousand-word description of the trip. The book is illustrated by photographs taken by the author and crew and the matter descriptive of their life and adventures in the tropics is exceptionally interesting. The crew, aside from the author, his wife, and a friend, consisted only of a cook and a cabin boy. The price of the book is $2.

* * *

"Swiss" Spark Plug Connection.

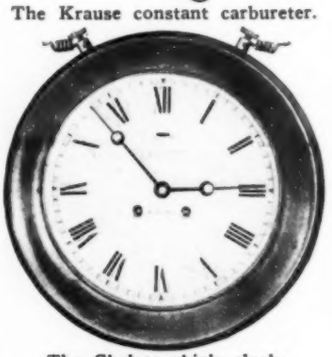
The new spark plug connection shown in the accompanying illustration is made by the Swiss Magneto Company, of Chicago, makers of the Swiss Magneto, and its operation can be readily understood from the accompanying diagram. It is easy and quick to adjust and a defective plug may be replaced or removed for examination without loss of time. No tools are required to attach it and there are no soldered connections to make or nuts to unscrew. Perfect contact is assured at all times and there is nothing to break, wear out or get out of order. This contact is furnished to manufacturers in quantities to fit any make of spark plug or it may be secured by individual owners.

* * *

A New Book on the Marine Engine.

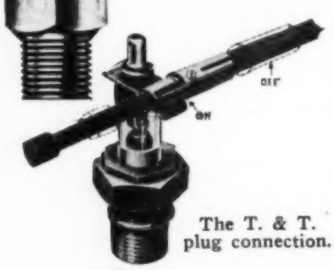
An excellent little book that should prove valuable to everyone interested in the marine gasoline and oil engine has just been published by the D. Van Nostrand Company, of New York City. The book is by Carl H. Clark, and deals with its subject in a simple but masterful manner. Only the simplest equations and these only when necessary, have been used and the book while thorough is the kind that would be of the greatest value to the average motor boatman. The price is $1.50. The chapters include useful advice upon almost every subject connected with motor boating, describing the various types of engines and the uses of each for its particular purpose.

The Krause constant carbureter.



The Chelsea ship's clock.

The "Swiss" spark plug connection.



The T. & T. plug connection.

The Ero watch holder.

Fahnestock Battery Terminal.

The Fahnestock Electric Company, 129 Patchen Avenue, Brooklyn, N. Y., have just brought out a new design in a battery terminal intended for use with a storage battery. It consists of a spring similar to the type used on dry cells, with one part extending through the other when compressed, so that when the terminal is inserted, the spring action of the device holds it tightly. The wire terminal may be easily removed by pressing down upon the outside of the spring. The device is made with a large hole at the attaching end, lead coated around it, so that it may be permanently attached to a storage battery and the wire terminals may be attached and detached very quickly.

* * *

Chelsea Ship's Bell.

This ship's bell is intended for use on yachts and in yacht clubs and is outfitted with a special electric attachment, so that on large yachts the big bell forward is operated by the Chelsea striking ship's bell clock located in the cabin or pilot house, the tongue of the bell being left free so it may be operated by hand in a fog. The outfit is made by the Chelsea Clock Company, 16 State Street, Boston, in four sizes of bell, the 5¾-inch size being listed at $75, 6¾-inch at $80, 8½-inch at $90 and 10¼-inch at $100. This price includes the bell, relay, magnet, boxes, switch and wiring diagram, and any good electrician can complete the wiring and supply the batteries. Any type of Chelsea clock may be used with this attachment, and any present Chelsea clock may be fitted with the striking bell without additional expense.

* * *

T. & T. Plug Connections.

The Tri-State Rubber Company, 1017 Nicollet Avenue, Minneapolis, are selling for the low price of 25 cents a very useful terminal, which is useful both as a spark plug connection and as a tester for the spark. It will fit any plug by the use of the thumb nut and is instantly attached or detached. The illustration shows the simple manner in which it may be used to test any plug and locate trouble in the ignition circuit. It is always cool and is perfectly insulated so it may be handled without danger while the motor is running. The use of this device makes unnecessary the removal of a spark plug to discover whether or not it is working properly, as the spark may be tested at any time. It occupies but little more room than an ordinary terminal and is so constructed that it cannot work loose. The dotted line in the illustration shows the simple manner in which the current may be connected and disconnected as desired. The operation is very simple, rapid and the results obtained have been satisfactory.

* * *

Ero Watch Holder.

The watch holder shown in the accompanying illustration can be attached in any way desired to any part of the wheel where it will be in full view of the operator. It is made in one piece and is strong enough to withstand the hardest kind of service, as a spring holds back the watch from vibrating or twisting. It is highly nickeled and cannot rust. The device may be furnished with either time indicators or a plain dial, so that the instrument may be used to register the time of leaving for a cruise, or of an important appointment. It is made by the Ero Manufacturing Company, 914 Jackson Boulevard, Chicago, and sells for $1 without the indicator or $1.25 with it.

Rayfield Strainer Trap.

A new type of gasoline trap is being made by the Findeisen & Kropf Mfg. Co., of Chicago, manufacturers of the Rayfield Carbureter. This instrument is designed to permit the gasoline to enter at one end, where it flows directly to the bottom. In passing out it rises and goes through a fine metal screen. All dirt and water is left in the bottom by this means, and it can be drained off at any time through the cock provided. The instrument may be placed at any point between the tank and the carbureter in the gasoline line, and the trap is furnished with a brace by which to fasten it to any convenient point in an accessible position. The trap should always be installed with the arrow pointing toward the carbureter. To clean the instrument it is necessary simply to loosen the screw in the top, remove the clamp and lift out the cover and strainer. The trap is five inches high and 2½ inches wide. Furnished complete as shown, with drain cock, brace and two connections, the price is $2.

* * *

The Vibracator.

This instrument is a sound intensifier built upon scientific principles by Hopewell Brothers, of Newton, Mass. It is very similar to the physician's ordinary stethescope and consists, as the illustration shows, of a diaphragm for intensifying the sound, and a rubber tube connected to two ear-pieces. It is very simple with the use of this instrument to locate extraneous noises in motors and machinery. This is ordinarily a very difficult problem, especially if the trouble is caused by some slight knock which the noise of the motor renders very difficult to identify. The diaphragm, when placed over a cylinder or shaft so concentrates and intensifies the sound that comes from its immediate vicinity, the ear-pieces serving to keep out foreign sounds, easily determines whether that particular part of the motor is working normally. The price of the instrument is $2.50.

* * *

Detroit Air and Priming Cocks.

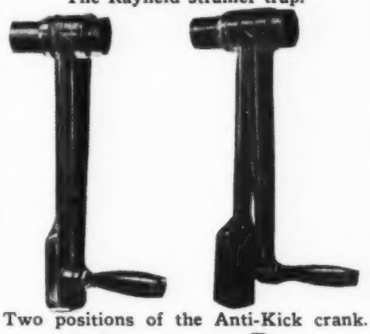
A complete line of air and priming cocks is being made by the Detroit Lubricator Company, of Detroit, and the 1911 assortment includes a number of new models. They are made from a high grade steam metal and are carefully ground, so that they will not leak gasoline, oil, water or air. They can be furnished with a spring if desired, which keeps the cock tight without wear and allows it to be turned easily, making a tight adjustment unnecessary. The line includes a cock for almost every purpose, and they are made in many sizes and shapes. The type shown is made in four sizes and is of the popular kind that never sticks.

* * *

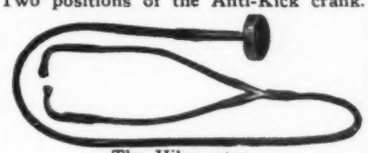
Herz Automatic Time Adjustment.

Herz & Co., 295 Lafayette Street, New York City, have just placed upon the market a new automatic time adjustment for ignition apparatus which can be fitted to any magneto and allows a range of adjustment up to 60 degrees. With the use of this adjustment the starting handle can be easily operated with completely retarded ignition, so there is no danger of accidents from back firing. Since the time of ignition is adjusted automatically in accordance with the number of revolutions and the gaseous mixture, the motor runs evenly and quietly. The device is very simple, consisting of two juxtaposed discs in the form of a coupling which is interposed between the magneto apparatus and the main shaft. Each of these discs is provided with three curved grooves running in the opposite direction to those on the other disc, and the discs are coupled together by means of three balls running in the grooves. These balls are forced outward from the center by centrifugal force to an extent corresponding with the speed of the motor, and in this way a twist is imparted to the armature of the magneto in relation to the main shaft. When the motor slows down the balls are driven backward toward the center by the resulting peripheral forces, the armature being thereby twisted in the opposite direction. Any desired degree of adjustment can be obtained.

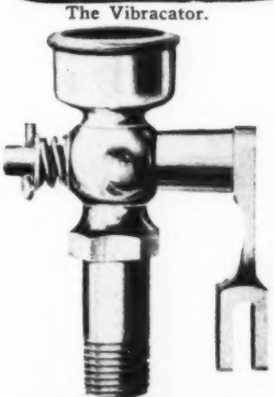
The Rayfield strainer trap.



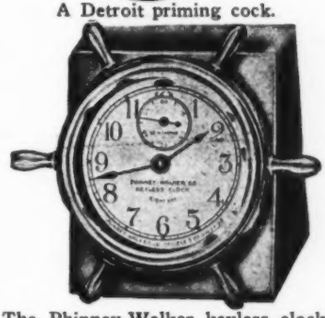
Two positions of the Anti-Kick crank.



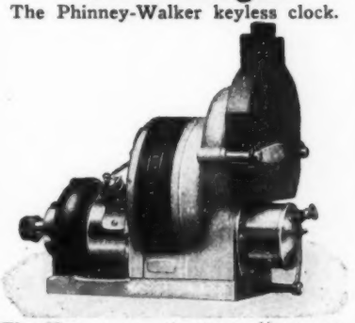
The Vibracator.



A Detroit priming cock.



The Phinney-Walker keyless clock.



The Herz automatic time adjustment.

Weiland Supplementary Carbureter.

A carbureter which is being sold complete for $5 is that known as the Weiland Supplementary Carbureter, which is automatic in its action and supplies the correct mixture regardless of the speed of the motor. It is made by the American Die & Tool Company, of Reading, Pa., and can be attached to any float feed carbureter as a permanent fixture. It is attached to the side of the float chamber in such a way that the float level is visible in the gauge glass, so that the amount of gasoline in the gauge glass may be adjusted according to the size of the motor. It is connected to the bottom of the float chamber, and the gas outlet is connected with the intake pipe at some convenient place between the throttle and the inlet valves. With this device advantage is taken of the high suction between the throttle and the inlet valve when the engine is running on partly open throttle. The air travels down and up through the gasoline, which gives a very rich mixture for starting. When the engine is running all the gasoline is taken from the gauge glass and only gas is seen above the holes. The flow of air varies with the speed of the motor, and by having this gasoline flow independent of the air velocity the defect found in many carbureters is overcome. The mixture automatically becomes richer when the motor is throttled down and weaker when it is speeded up.

* * *

Anti-Kick Crank.

An efficient and positive crank has recently been placed upon the market by the Anti-Kick Crank Company, of Kansas City, Mo., which is equipped with a safety device to eliminate the danger of back-kick when cranking the motor. The device is composed of practically two members, forming an ordinary two-way clutch and a coil spring always in engagement. The small extra weighted member forms the automatic part of the crank and disengages the clutch in a light or severe back-kick, but has a movement of only about an inch. The action is so quick in the event of a back-kick that this movement is not perceptible. The crank is made to fit any motor and requires no drilling of holes and no attachments. It operates the same as the old crank and goes on in its place. The device is drop forged from a special wrench steel and is enameled in any color desired, with a handle of either brass or nickel finish. The price is $12.50.

* * *

Triumph Competitive Plug.

A. R. Mosler & Co., of 163 West 29th St., New York City, have met the demand for a cheaper spark plug in the production of an open end porcelain plug which is being sold at a price of $1 for three plugs for a short time. The regular price, after the plugs have been introduced, will be 50 cents each. This plug is of the open end type, with a deep recess in the insulator, and is designed to comply with the requirements where the open end plugs are compulsory. The porcelain is hand turned and is gas tight, with pure asbestos wicking. The B. M. A. mica plug, which is also a new product, sells for 75 cents. This plug is very simple and easy to keep clean. The metal base has an unusually deep chamber combined with the advantage of having the insulator removable and easily accessible. The unscrewing of the brass cap while the plug is in the cylinder removes the entire core with the cap, thereby allowing quick cleaning of the extremity of the insulator.

* * *

Phinney-Walker Keyless Clock.

The Phinney-Walker Keyless Clock Company, of 79 East 130th Street, New York City, have recently placed upon the market the keyless boat clock shown in the accompanying illustration. It is a truly nautical clock and wound by turning the model steering wheel with which it is enclosed. The clock is made in several styles and the figures are sufficiently large to be read at a considerable distance.

YARD AND SHOP.

A Reliance 21-footer of 20 h. p. making 20 miles an hour. She was recently delivered to Mr. Clarence Pitman, of New York City.

New Motor Boat in Canadian Government Service.

The Department of Naval Service of the Canadian Government, at Ottawa, Ont., is fitting out a schooner which is going to Hudson Bay for survey purposes. This schooner is 101 feet long by 25 feet beam, and will be fitted with a 40 h.p. heavy-duty, four-cylinder Sterling engine.

Deputy Prowse Explains Motor Boat Requirements.

A new interpretation of the requirements of motor boat life preservers made by Acting Secretary Ben S. Cable, and just received by Deputy Surveyor of Customs Samuel T. Prowse, is as follows: "——the department authorizes the use of kapoc for filling buoyant cushions for motor boats on the following conditions:

"The manufacturer of buoyant cushions filled with kapoc shall indellibly stamp or permanently mark upon the cushion the name of the manuacturer, the place where manufactured, and the fact that the material with which it is filled is prime Java kapoc, capable of sustaining afloat twenty-five times its net weight for forty-eight hours.

"Manufacturers of buoyant cushions of this character shall furnish their representatives with a sample or legend of such stamp, which, upon application, shall be furnished the proper officer of the government.

"(Signed)

"BENJ. S. CABLE,

"Acting Secretary."

Jencick Motor Mfg. Co. Files Bankruptcy Schedule.

The Jancick Motor Mfg. Co., of Portchester, N. Y., has filed schedules in bankruptcy showing liabilities for $55,674 and assets $64,674.

J. J. Harvey Joins Forces of Powell Marine Engine Corp.

J. J. Harvey, for several years connected with the American Locomotive Company, has assumed management of the Powell Marine Engine Corporation, of Brooklyn, N. Y.

Monitor Boat & Engine Co. to Enlarge Plant and Line of Manufacture.

The Monitor Boat & Engine Co., of Newark, N. J., which has manufactured heretofore knockdown boat frames exclusively, has decided to add to its line, semi-finished hulls, *i. e.*, frames that are simply planked, but without either interior or exterior finish. Ground has also been purchased for an addition to the new plant which was only completed a few months ago.

Twenty Steel Boats for United States Government.

The Rippley Steel Boat Co. ,of Grafton, Ill., reports that it has booked an order for twenty 20-foot No. 4 steel boats for the U. S. Government.

Priscilla, a Reliance 40-footer, recently delivered to S. A. French, of New York City.

Thelma Motor Sizes.

On page 56 of the July issue of this magazine a typographical error caused the description of Thelma motors, made by the Thelma Motor Works, of Detroit, to be somewhat misleading. Instead of stating that the motors are also made on order with eight and ten cylinders, the paragraph should read eight *by* ten cylinders. The latter is a heavy-duty type and is made in four and six-cylinder design.

Scripps Motor in Foreign Field.

As evidence of the inroads being made by American manufacturers of marine motors in the foreign field, information contained in a letter to the Scripps Motor Co. from its agent in Finland will prove interesting. The letter states that of several new boats entered in the Helsingfors regatta, to be held this summer, five 37-footers with 18-30 h.p., a 40-footer with a 25-30 h. p. and two or three smaller craft are all fitted with Scripps motors.

Report on Balsa Wood Life Preservers.

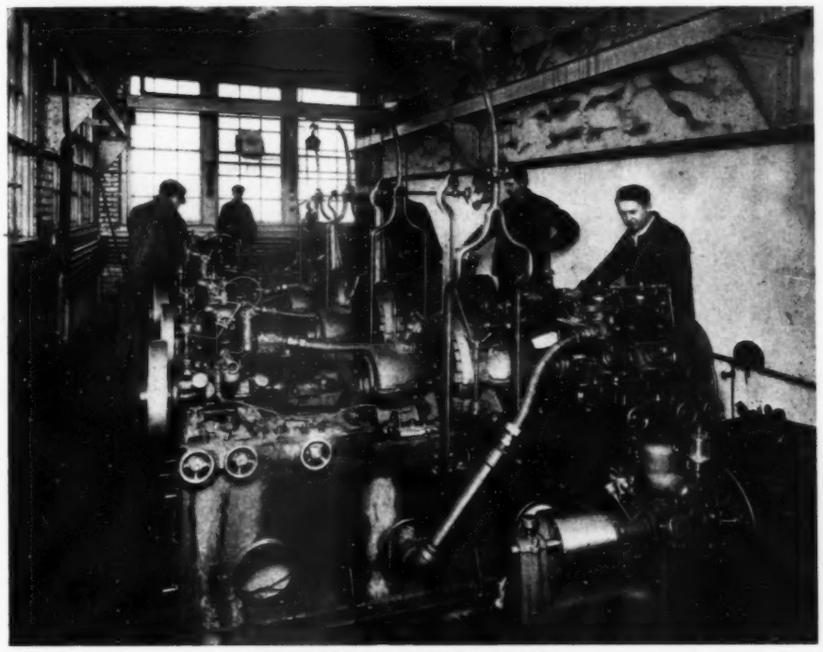
The Welin Davit & Lane & DeGroot Company, Long Island City, referring to a lately published article entitled "That Red Top Incident," has furnished us with a report of the committee on life saving appliances to the Board of Supervising Steamboat Inspectors on their Balsa Wood life preservers. This report reads:

"The device consists of ten blocks of Balsa wood each 10" x 4½" x 1¾" all coated with a black solution to prevent them from absorbing water, the whole being assembled in strict conformity with the rules. The Life Preserver in question is small and compact, weighing when dry, but five pounds; after being entirely submerged in water for forty-eight hours it floated a weight of 22 pounds placed upon its top, and after removal from the tank and allowed to drip for twelve hours, not sufficient time to entirely dry its jacket, it then weighed but four ounces more than when dry, thus exhibiting remarkable buoyancy; hence your Committee recommends the "A-B-C" Life Belt for adoption by this Board."

JOHN BIRMINGHAM,
C. H. WESTCOTT,
IRA HARRIS,
Committee.

Cruise of the Pierce Traveler.

S. E. Holder started on a cruise of 6,800 miles, principally on inland waters on July 1st. This cruise is being made in behalf of the Pierce Motor Company, of



Where Gray motors are tested.

Racine, Wis., and, will of course, be made in a boat powered with a Pierce motor.

Foreign Opportunities.

According to consular reports, Venezuela and South American countries should prove good fields for the manufacturer of marine motors. Motor boats could be profitably used in the pearl fisheries of Marguerite Island, in the fisheries of Roques and Orchallia Islands and in bringing products of the interior to the coast where no steamboat service has as yet been established. Many sailing craft now being used could be profitably converted into auxiliaries. It is said that a man on the ground is required to look after this business and could be profitably employed in the South American territories. Native agents, we understand, cannot at the present be advantageously employed on account of their lack of knowledge of motors, but an expert in this line could educate differeent agents in demonstrating the good points and operation of marine motors who could afterward be left to handle the business alone.

Sucessful operation of Chinese-built motor boats upon the inland waterways of China for freight and passenger service opens a new market for the American product which promises to show large and rapid increases within the next few years. Motor driven craft have gained wonderful popularity, there is a big boom on and, since very good boats can be built in China much more cheaply than in foreign parts, a demand for boat building machinery has sprung up, and as the motive power machinery is necessarily all imported, American manufacturers would do well to give serious consideration to this new opening. The motors used are mostly heavy-duty, using kerosene as fuel. Heretofore most of the motors sold have been of English or German manufacture.

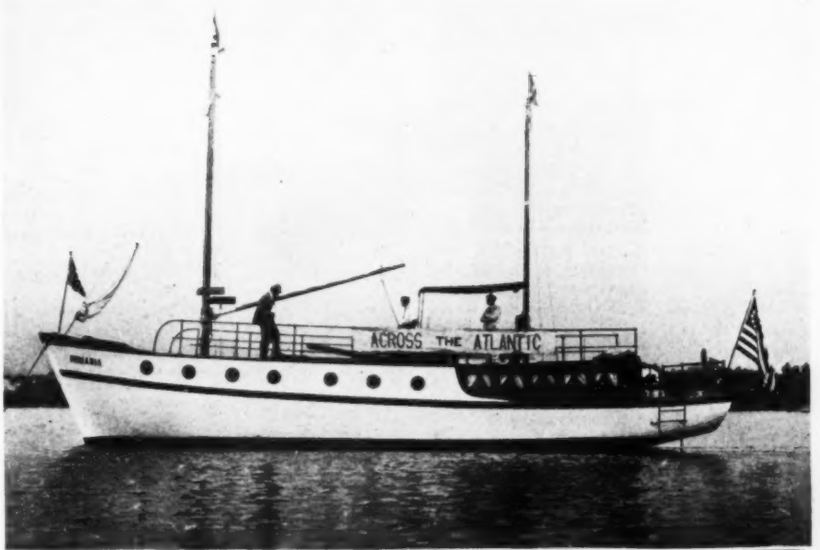
Recent exports by American manufacturers are as follows: W. R. Grace & Company, of New York City, has shipped a 30-foot whaleboat with 11 h.p. motor to the west coast of South America for the Welin Davit & Lane & DeGroot Company. Carr Brothers, of New York City, have also accepted delivery from the same company for a 36-foot shallow draft steel launch equipped with a 25 h.p. motor. The Canadian government has awarded a contract for a 40 h.p. Sterling motor to be installed in a schooner which is to be sent to Hudson Bay for survey purposes. The Welin Davit & Lane & DeGroot Company announce that they have orders for a 40-foot speed boat which will be used by the Vancouver, B. C., police department and a fast passenger service boat which will be used on the rivers of Colombia, S. A.

Doman Motors Improved.

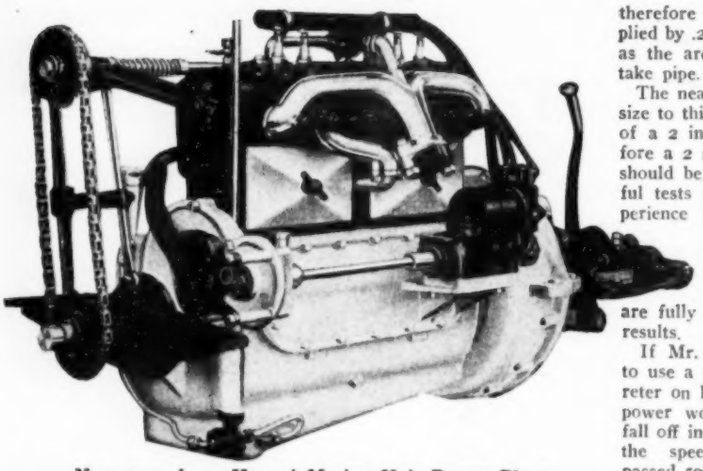
The H. C. Doman Company, of Oshkosh, Wis., have recently made a change in the design of its heavy-duty motors, and these are now built with the T-head valve arrangement instead of the "valve in head" type, as formerly. It is thought that this change will increase the efficiency of the motors, as the company has been making experiments for some time to determine the advisability of altering the valve construction. Heavy-duty Domans have been placed in several large boats during the present season, among them being one of the Standard Oil Company's boats in New Jersey and several cannery tenders at Seattle.

The Hazard Marine Motor.

The Hazard Marine Unit Power Plant is made by the Hazard Motor Mfg. Co., of Rochester, N. Y., and is designed to meet the demand for a simple, powerful and light motor capable of handling any class of marine work. The motor is equally efficient upon high or low speeds and for that reason is called 15-25 h.p., depending upon the service and speed at which it is run. All parts are enclosed, yet readily accessible, and the enclosed flywheel makes it possible to run the motor submerged to the crankshaft. The unit plant consists of a four-cylinder, four-cycle motor and reverse gear, including a disc clutch, rear starter, bearings, universal joint, propeller brake, pumps, spark plugs, wrenches and Schebler carbureter. Any make of ignition system can be fitted and the plant is arranged for one-man control. The oiling system is a combination of forced feed and gravity and the cylinders are offset slightly. Generous water spaces are provided at all points, especially where the most heat is supplied and the water enters the jackets at the bottom and



Capt. John Weller, his crew and the Romania, in which they started across the Atlantic on July 15th.



New 15-25 h. p. Hazard Marine Unit Power Plant.

leaves at the top. The overflow is conducted to the gas exhaust manifold, cooling the gases as they leave the motor and acting as a muffler. The bore of the motor is 3¾ or 4 inches, as desired, and the stroke is 4½ inches.

* * *

From Motor Boating Readers.

(*Continued from page 55.*)

We do not know from what authority this formula is obtained, but the results are far from what they should be. Very few engineers seem to appreciate the fact that the intake port of a three-port, two-cycle motor is open only about one-quarter of a revolution.

Customarily in four-cycle motors, we try to keep the speed of the ingoing gas to about 100 ft. per second, but the writer has found that in two-cycle, three-port practice, 120 ft. per second gives satisfactory results.

The piston speed of this motor at 800 r.p.m. is 750 ft. per minute or 12½ per second. The area of 4⅝ diameter is 16.80. As the volume of the piston displacement must be taken into the crankcase during half the stroke, if we had the intake port the full area of the piston, it would have a speed of 25 ft. per second during suction. The ratio of 25 to 120 is .2105, therefore 16.80 multiplied by .2105 gives 3.85 as the area of the intake pipe.

The nearest standard size to this area is that of a 2 in. pipe, therefore a 2 in. carbureter should be used. Careful tests and long experience in two-cycle, three-port motors prove to me these assumptions are fully warranted by results.

If Mr. Oleson were to use a 1¼ in. carbureter on his motor, the power would begin to fall off in proportion to the speed after he passed 500 rev.

E. W. ROBERTS,
Sandusky, Ohio.

Rift Climber for Russia.

The Rift Climbing Motor Boat Company, of Athens, Pa., lately received an order for one of their 20-foot boats from Moskow. This type of craft is well suited to the swift running streams of Russia.

Motor Boating Trade Literature Received.

M. I. Boyle Co., New York representative of the Bath Marine Construction Co., 30 Church St., New York City.—"Sixteen miles per hour for $475." A circular describing the Hand V-bottom launch with photographs and prices.

Monitor Boat & Engine Co., Newark, N. J.—Advanced supplement to the 1912 catalogue, giving specifications and drawings of the new knock-down frames.

The Esterline Co., Lafayette, Ind.—A booklet describing the "Matchless" electric lighting and ignition system and giving some general information on this subject.

Regal Gasoline Engine Co., Coldwater, Mich.—A catalogue of engines and accessories sold by this company. Attached to this book is a supplement entitled "What the Users Say," being a collection of testimonial letters.

Willard Storage Battery Co., Cleveland, Ohio.—Bulletin No. 39 on electric lighting and ignition storage batteries.

DuBrie Motor Co., Detroit, Mich.—An illustrated booklet containing prices and specifications of the DuBrie marine motors with their "application for trial" blank and freight rates to principal points from Detroit.

Gray Motor Co., Detroit, Mich.—"A Visit to a Great Plant." A unique booklet showing the facilities for handling their business. Interior and exterior views of the plant.

Aetna Brass Mfg. Co., Cleveland, Ohio.—A brochure showing marine supplies manufactured by this company.

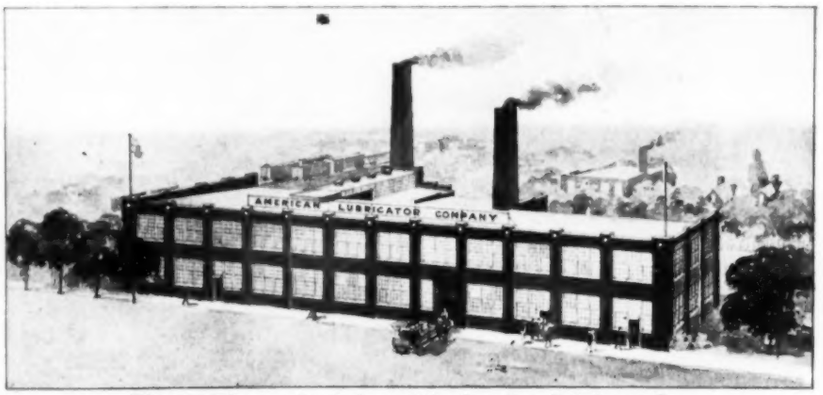
Ferro Machine & Foundry Co., Cleveland, Ohio.—"Making Business and Doing Business," which is a mailing pamphlet, sent with the idea of securing new Ferro agents with a plan to co-operate with the agents in building up a marine supply business.

Rift Climbing Boat Co., Athens, Pa.—A leaflet on the "Rift Climber," a boat for shallow inland waters.

Matthews Boat Co., Port Clinton, Ohio.—A combined booklet and folder entitled "Matthews Craft." Profusely illustrated and giving some facts about the conduct of their business and their product.

Fowler Lamp & Mfg. Co., Chicago, Ill.—Catalogue of lamps, dome lights, and electric fixtures.

Pedersen Lubricating Co., New York City.—A mailing card describing the latest engine lubricating devices of this company.



The recently completed plant of the American Lubricator Co.

LAKE CHAMPLAIN, Y. C. ANNUAL REGATTA: August 1st.

NEW YORK TO CAMDEN, N. J., OCEAN RACE: August 4. Cruisers, 30 to 50 feet. Start off club house of New York Motor Boat Club, finish off club house of Camden Motor Boat Club. Distance, 225 miles.

GREAT LAKES POWER BOAT LEAGUE: August 4 and 5. Annual regatta, at Detroit.

OCEAN CITY (N. J.), YACHT CLUB REGATTA, August 5.

NEW YORK MOTOR BOAT CLUB: August 5.

CLUB RACES FOR OPEN BOATS, UNDER W. P. B. A. RULES: August 5.

ROBINS REEF YACHT CLUB: August 6. Club races.

SCRIPPS RELIABILITY CRUISE: August 7 to 14. This race will start from Detroit and will finish at Buffalo, held under the auspices of the Great Lakes Power Boat League. Distance, about 600 miles. Open to power boats not under 30 feet in length.

FRONTENAC YACHT CLUB: August 7 to 12. Motor boat race week, Frontenac, N. Y.

GREAT LAKES POWER BOAT LEAGUE: Aug. 8, 9, 10. Annual meet.

A. P. B. A. GOLD CHALLENGE CUP RACES: August 8, 9 and 10, for gold cup now held by Frontenac Yacht Club, Frontenac, N. Y., on the St. Lawrence.

ATLANTIC CITY TO CAPE MAY, N. J.: August 12. Race for speed boats. Sea Isle City Yacht Club.

FIRE ISLAND LIGHT SHIP RACE: National Yacht Club, August 12, Brooklyn, N. Y. Cruisers 30 to 70 feet, A. P. B. A. handicaps. Gravesend Bay to Fire Island Light Ship and return. Distance, 84 miles.

BUFFALO LAUNCH CLUB: Aug. 12.

CAMDEN MOTOR BOAT CLUB: August 12. Club race to Florence, N. J., and return.

DELAWARE RIVER CLUB, TORRESDALE, PA.: August 12. Open race for championship for Upper Delaware.

FARRAGUT SPORTSMAN'S ASSOCIATION, CAMDEN, N. J.: August 12. Regatta.

HUDSON RIVER MOTOR BOAT CLUB: August 12. Regatta.

HUDSON RIVER MOTOR BOAT CLUB: August 12. Race for ladies.

JUBILEE YACHT CLUB (Beverly Mass.), VITTUM CUP RACE: August 12.

ELIMINATION TRIALS: August 16, 17 and 19, to determine defenders of the Harmsworth Trophy. Motor Boat Club of America, Huntington, L. I.

WILDWOOD, N. J., Y. C. REGATTA: August 19.

N. Y. MOTOR BOAT CLUB: August 19. Club races for cruisers. N. Y. M. B. C. rules.

MANHASSET BAY Y. C.: August 19. Open races for boats under 35 feet.

ROYAL VANCOUVER Y. C.: August 19. Club regatta.

TAUNTON Y. C.: August 19. Races for motor boats.

ROBINS REEF Y. C.: August 20. Club run to Keyport.

BRITISH INTERNATIONAL RACES: August 24, 25, 26. For the Harmsworth Trophy defended last year by Dixie III. Huntington Bay, L. I. Motor Boat Club of America.

CAPE MAY Y. C.: August 26.

DELAWARE RIVER CLUB: August 26. Fourth race for Governor's cup.

SAN FRANCISCO Y. C.: August 27. Handicap race for club boats.

CITY ISLAND (N. Y.) Y. C.: September 2, 3 and 4. Cruise.

N. Y. MOTOR BOAT CLUB: September 2. Club races for open boats, N. Y. M. B. rules.

ROBINS REEF Y. C.: September 3 and 4. Club run to West Point.

JUBILEE Y. C. (Beverly, Mass.): September 4. Final race for Vittum Cup.

HUDSON RIVER YACHT RACING ASSOCIATION: September 4. Annual regattas, at Yonkers, N. Y.

NATIONAL ASSOCIATION OF ENGINE & BOAT MANUFACTURERS: September 4 to 9. Annual national motor boat carnival, lhed by the National Association in conjunction with the Motor Boat Club of America. Race for the High Speed Long Distance Trophy, Huntington Bay, L. I.

ASTORIA, ORE., MOTOR BOAT RACE MEET: September 4 to 9. Astoria Centennial, on September 7, 8 and 9, free-for-all Pacific Coast Championship series.

CAMDEN MOTOR BOAT CLUB: September 9. Open race for speed boats.

HUDSON RIVER MOTOR BOAT CLUB: September 9. Open race to Poughkeepsie and return.

BUFFALO LAUNCH CLUB: September 9.

GREAT LAKES CHAMPIONSHIP FOR THE E. R. THOMAS TROPHY: September 16. Motor Boat Club of Buffalo, course on the Niagara River.

N. Y. MOTOR BOAT CLUB: September 17. Economy race.

DELAWARE RIVER CLUB: September 23. Fifth race for Governor's cup.

FARRAGUT SPORTSMAN'S ASS'N.: September 23. Camden, N. J.

N. Y. MOTOR BOAT CLUB: September 24. Rockland Light Race.

SAN FRANCISCO Y. C.: October 8.—Motorboat Regatta.

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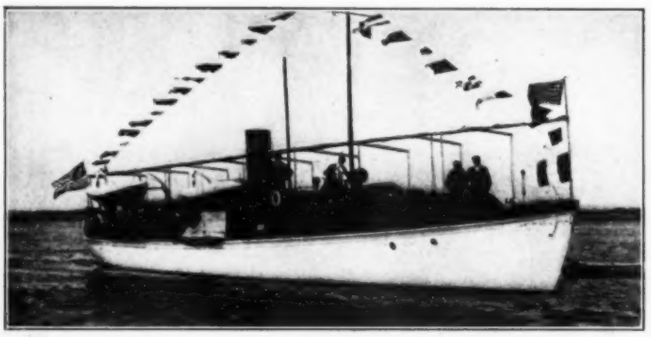

No. 481.—For sale or charter—90 ft. fast twin-screw power yacht. Now in commission.
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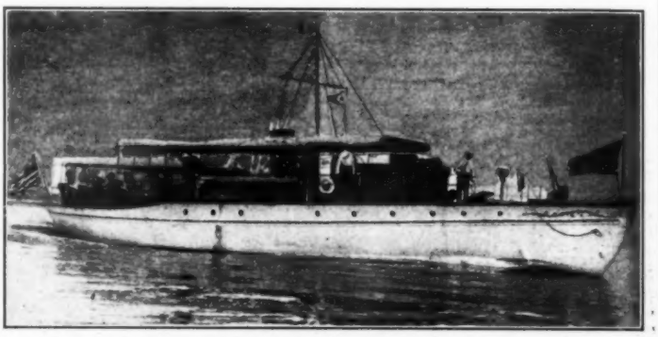

No. 600.—For sale—Modern 75 x 15 x 3.6 ft. cruising power yacht; speed 12-13 miles; two 40-50 H. P. Standards. Excellent accommodation.
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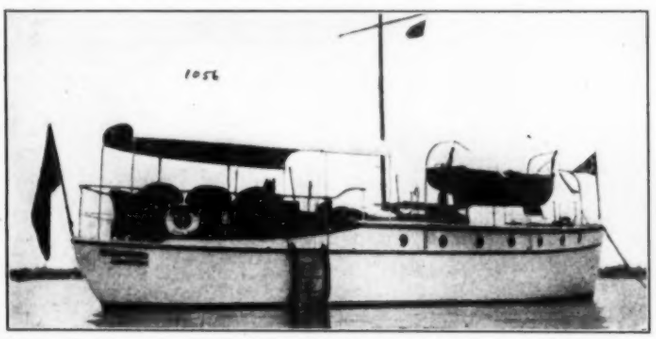

No. 1056.—Bargain—48 x 11.6 ft. raised deck cruiser; built 1909; speed 11 miles. In commission.
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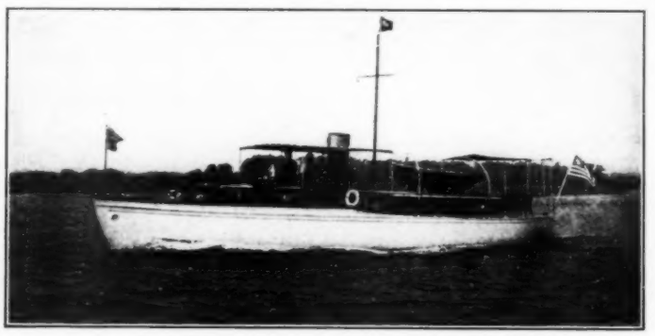

No. 579.—For sale—Splendid 60 ft. power yacht; probably best of size available. Very handsome and complete.
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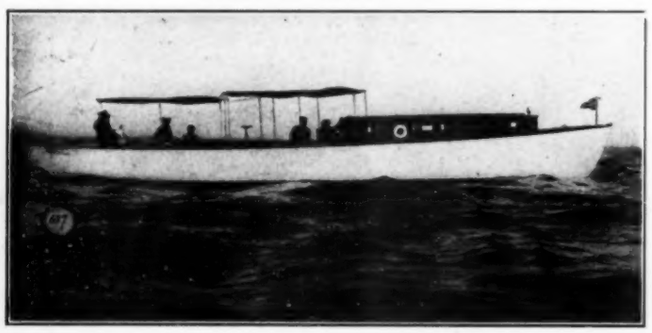

No. 910.—Offer wanted—53 ft. day cruiser; best of type available.
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No. 1116.—Bargain—40.6 x 9.6 ft. raised deck cruiser; built 1910. In commission.
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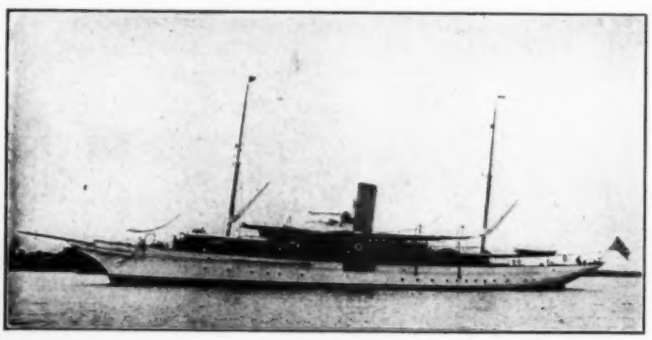

No. 341.—For sale and charter; modern 200 ft. seagoing steam yacht; terms reasonable.
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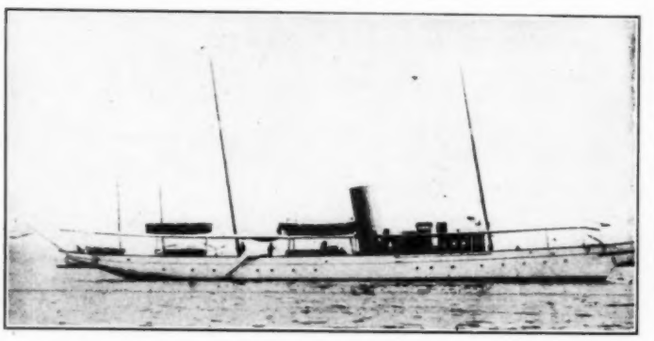

No. 57.—For sale and charter—Modern steel steam yacht; 140 ft.; fast and in good order. Price low.
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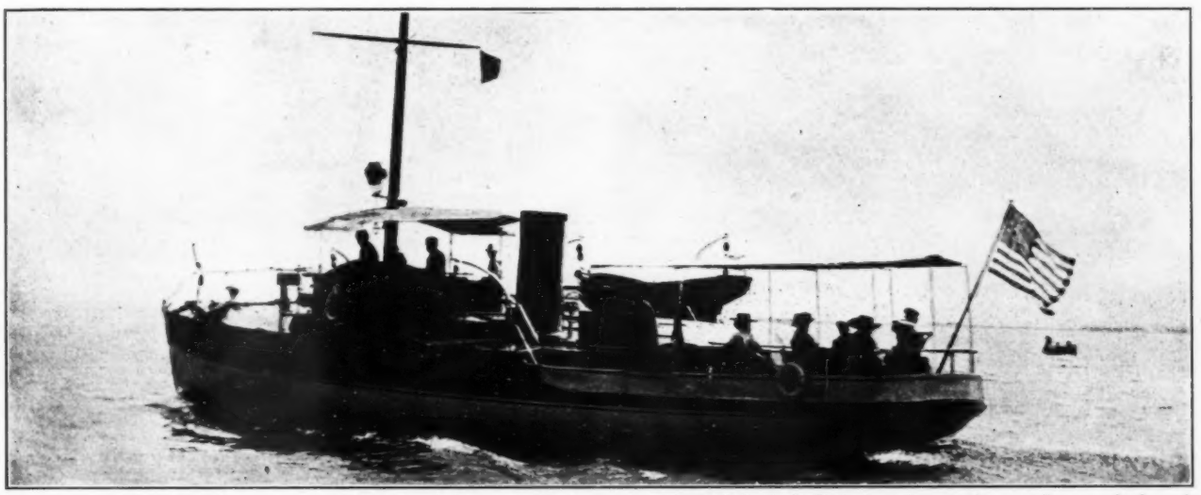
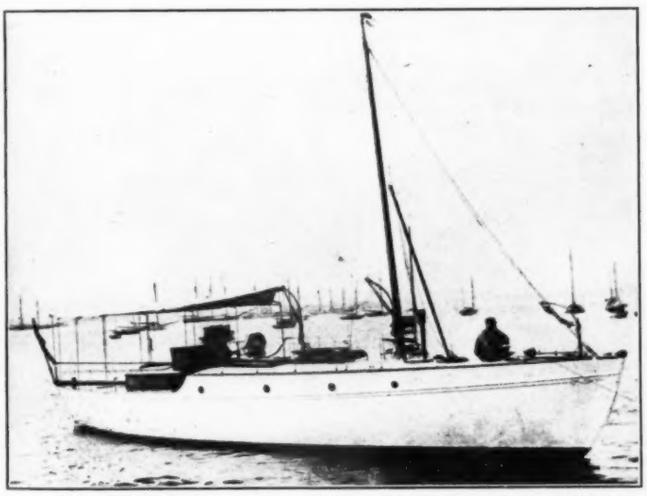
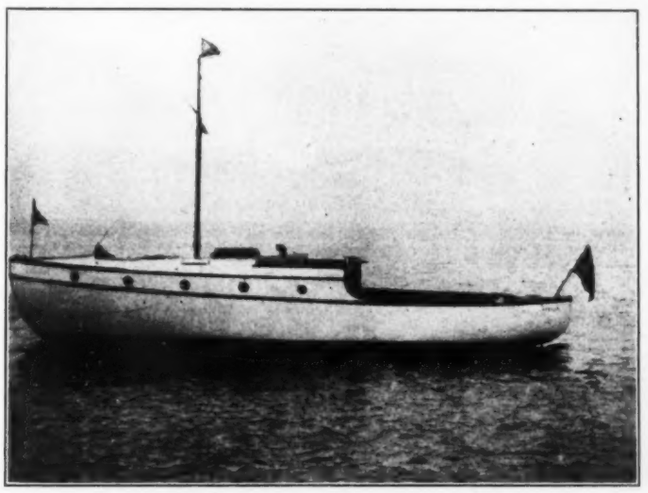


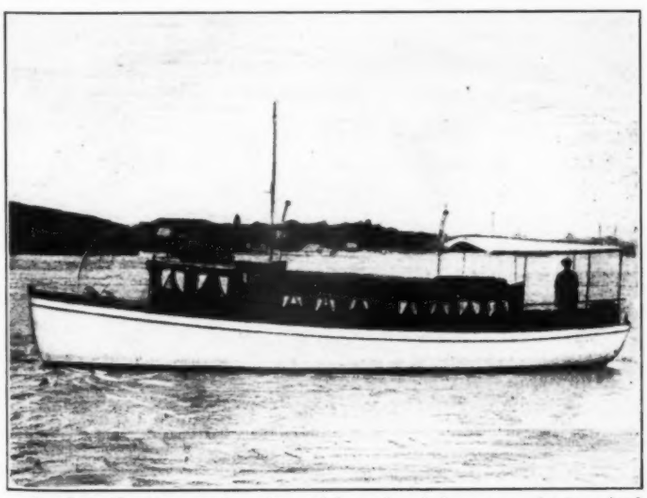
For Sale—No. 6171.—Seagoing cruiser, 70 o. a., 12 beam; launched 1909; double stateroom, 2 saloons, bath; 60 H. P. Craig engine; speed 12-13 miles; completely equipped; electric lights. Low price. Address Stanley M. Seaman.



For Sale—No. 6145.—Lawley cruiser, 54 o. a., 11 beam; stateroom; saloon berths 5; 2 toilets; 25 Standard; speed 11 miles. Ideal type, maintained with one paid hand. Apply to Stanley M. Seaman.



For Sale—No. 6636.—34 ft. single-handed cruiser, 8 ft. 4 in. beam, 30 in. draught; headroom 6 ft.; berths 3; toilet; 25 H. P. Jager; speed 10 miles; electric lights. Very low price. Address Stanley M. Seaman.



For Sale—No. 6632.—40 ft. cruiser, 9½ beam; launched 1909; superior type; headroom 6 ft. 3 in.; stateroom; saloon; berths 4; toilet; mahogany interior; 24 H. P. 20th Century engine; speed 10 miles. Bargain. Address Stanley M. Seaman.
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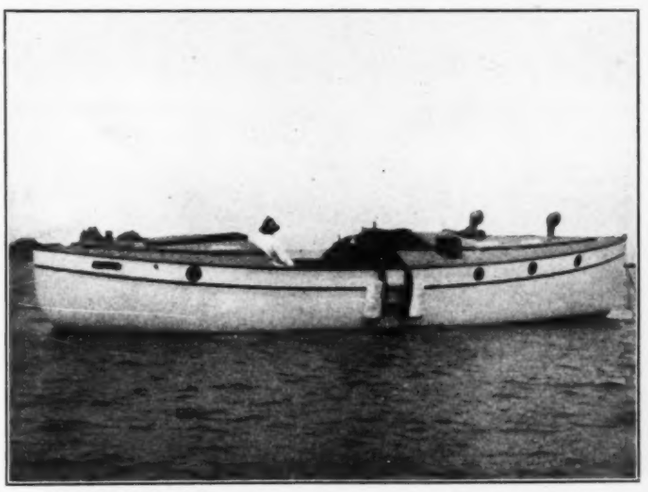

For Sale—No. 6652.—Latest type sea cruiser 33 o. a., 8 beam, 2½ draught; launched 1911; berths 4; toilet; galley; 25-40 Sterling; very able craft. Price reasonable. Will exchange for 60 ft. modern gasoline cruiser. Address Stanley M. Seaman.
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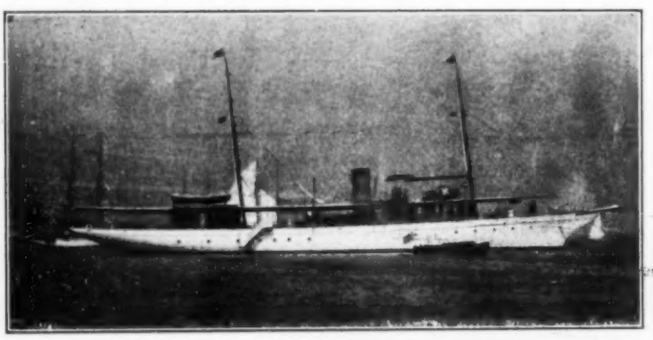

No. 540.—For sale and charter—modern, 130 ft. steam yacht; two deck houses and excellent owner's accommodation; best possible condition.
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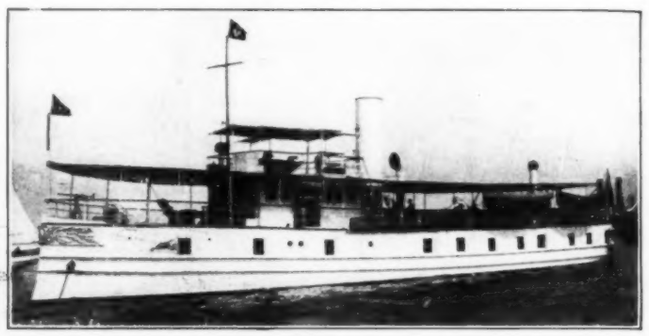

No. 422.—Very able and handsomely furnished houseboat; twin screw; 116 x 21 x 4; recent build; sale or charter.
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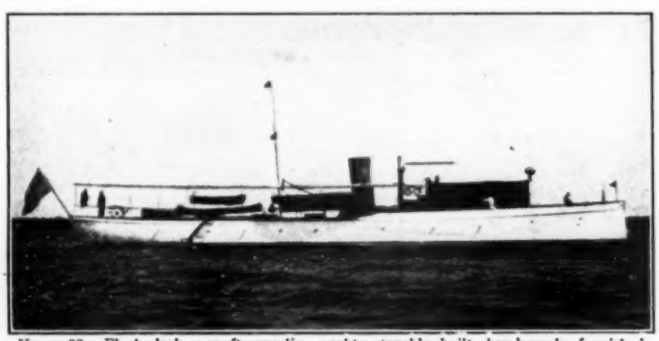

No. 1388.—Flush deck, 110 ft. gasoline yacht; stanchly built, handsomely furnished.
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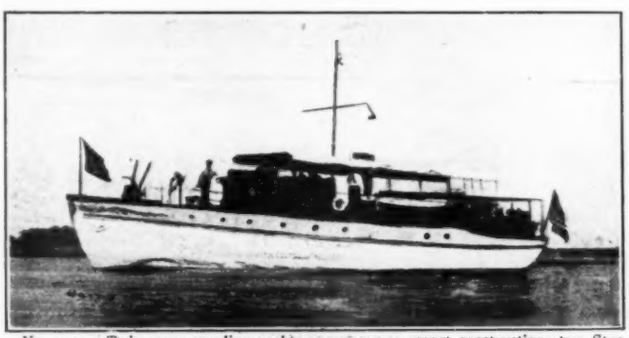

No. 1412.—Twin-screw gasoline yacht, 75 x 15 x 3.9; recent construction; two Standard six-cylinder motors.
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No. 1523.—Twin screw, fast 98 ft. gasoline yacht; new 1910; price attractive.
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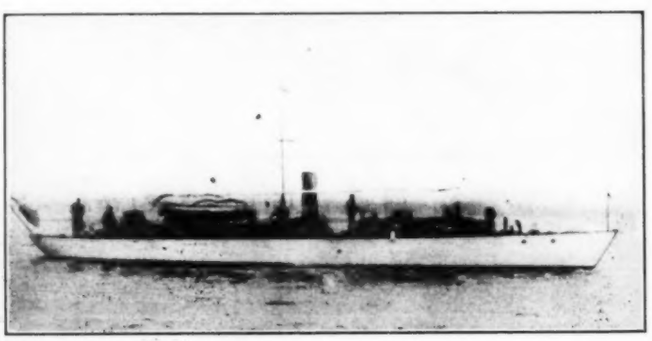

No. 948.—Fast, twin screw, 90 ft. cruiser; Craig engines; recently built from my design.
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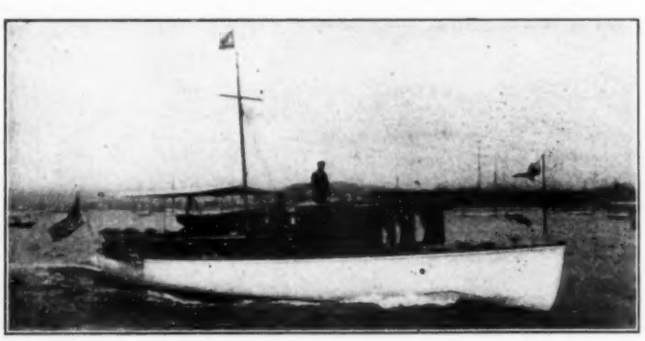

No. 746.—Handsome 60 ft. Lawley-built cruiser, A1 condition; now has stack.
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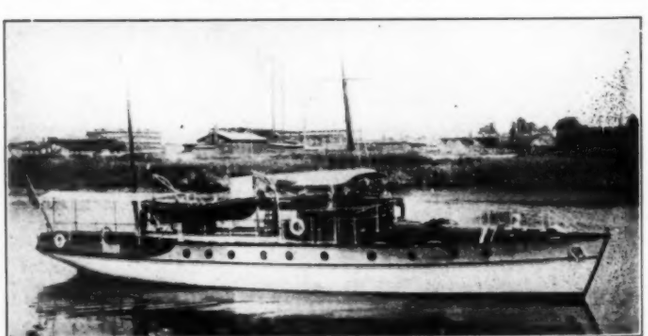

No. 1417.—Stanch 70 ft. cruiser, in commission; 60 horse power Craig engine. Inspection invited.
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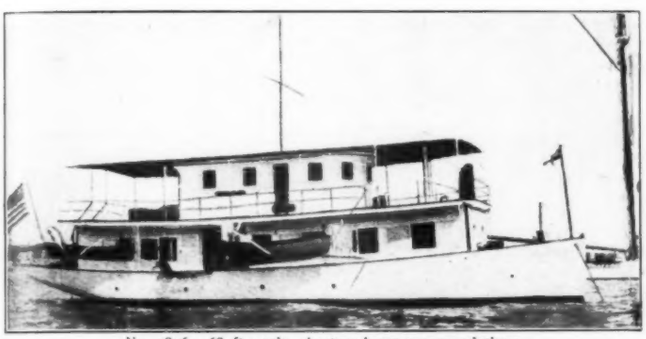

No. 1856.—68 ft.; sale, charter; large accommodations.
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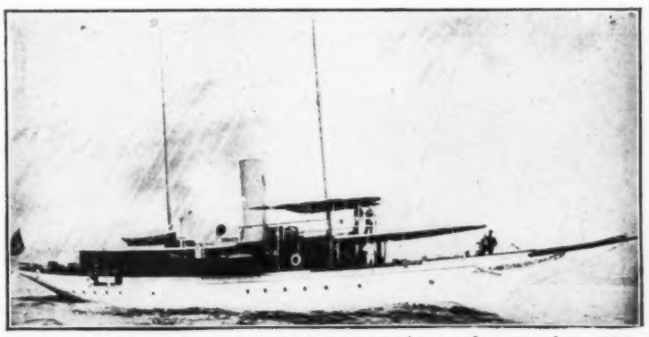

No. 85.—For sale or charter; very roomy steam yacht; 130 ft.; unusual accommodation; price low.
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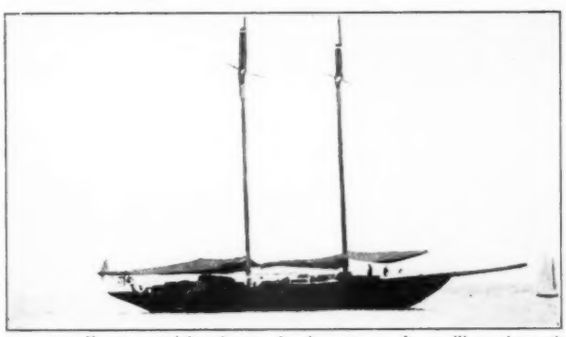

No. 6015.—Sale, charter; handsomest 100 ft. auxiliary; low prices.
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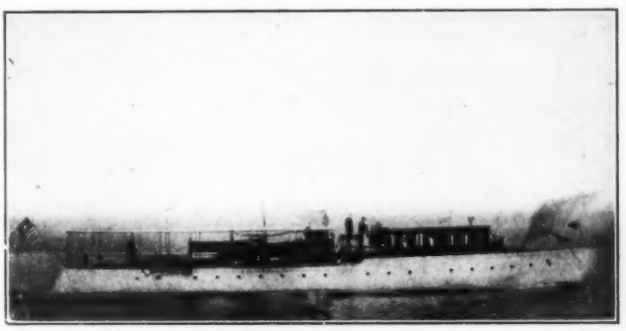
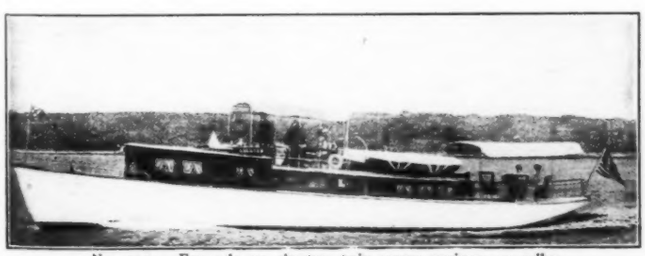
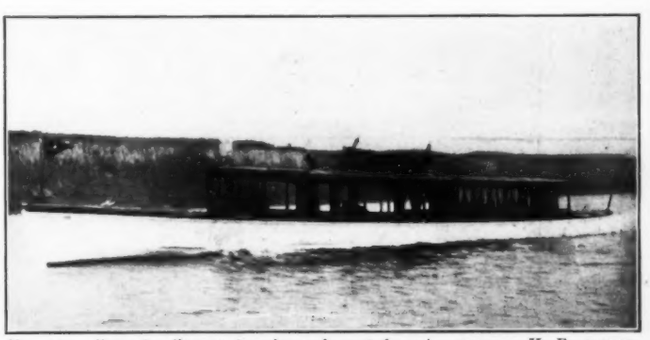


No. 7996.—98 ft.; fast; twin screw; gasoline; new 1910; price attractive.
Please mention MOTOR BOATING.

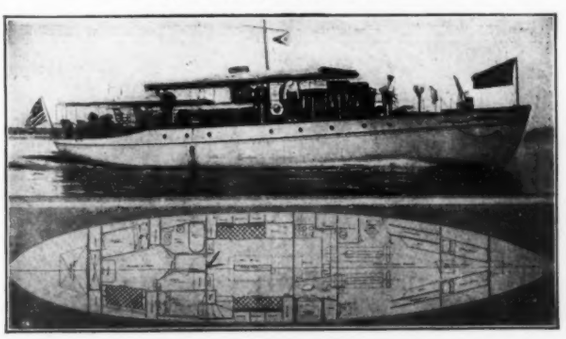


No. 7334.—For sale or charter, twin screw cruiser; 12 miles.
Please mention MOTOR BOATING.



No. 7409.—For sale—Express launch, 70 ft. x 8 ft. 3 in.; two 100 H. P. motors; excellent condition. Can be purchased reasonably.
Please mention MOTOR BOATING.

No. 7132.—50 ft.; Lawley build; sale, charter; attractive prices.
Please mention MOTOR BOATING.



No. 7723.—75 ft.; two Standard engines; very desirable.
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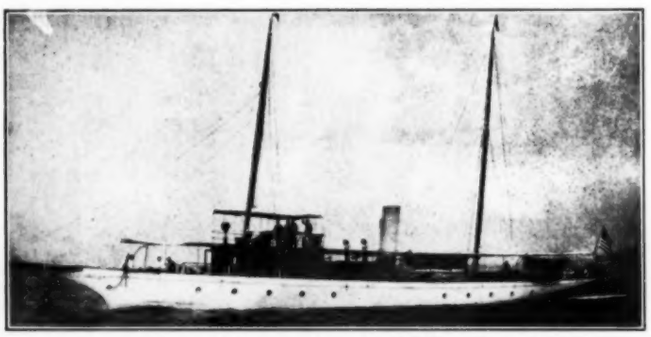
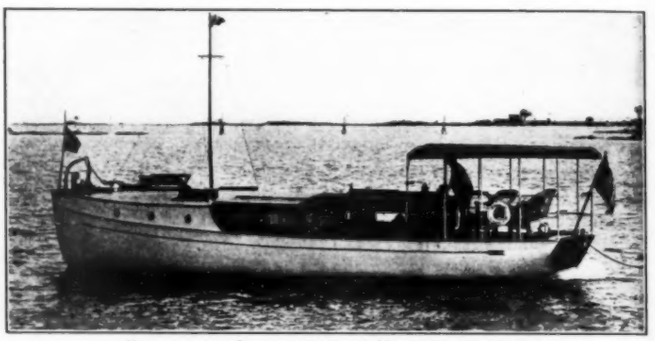
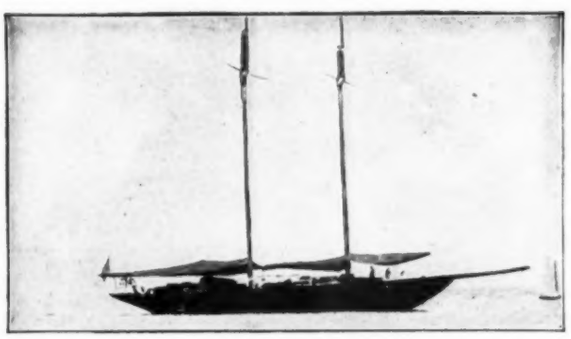


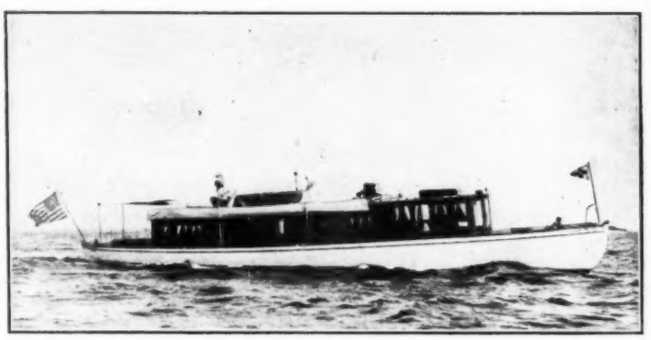
No. 429.—135 ft. by 18 ft. beam, able craft. Sacrifice; charter low figure.
Please mention MOTOR BOATING.



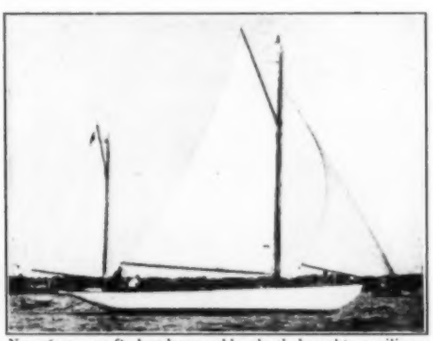
No. 3407.—40 ft.; new 1910; double stateroom, cabin.
Please mention MOTOR BOATING.



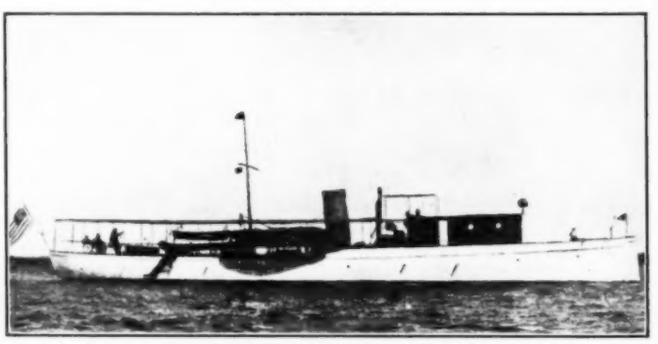
No. 2980.—106 ft. auxiliary, sale; also charter very low price.
Please mention MOTOR BOATING.



No. 103.—66 ft. light draught; ideal Southern cruiser; cheap.
Please mention MOTOR BOATING.



No. 2645.—55 ft. handsome, able, shoal draught, auxiliary; bargain.
Please mention MOTOR BOATING.



No. 2991.—112 ft. twin screw, flush deck. Cruised Maine to Cuba.
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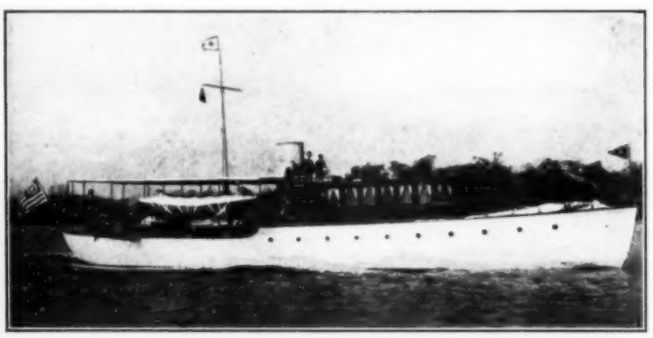
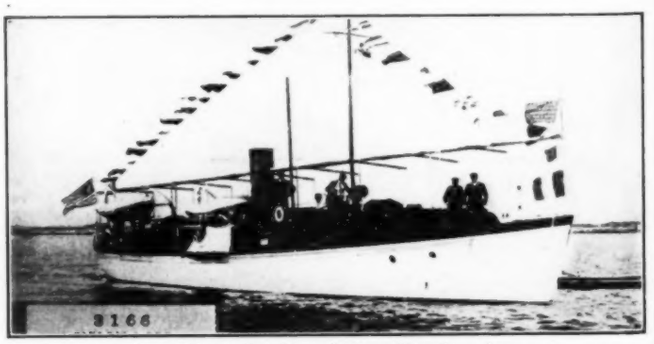


No. 3147.—83 ft. Lawley, 1910; large accommodations; offer desired.
Please mention MOTOR BOATING.



No. 3166.—95 ft. sale or charter. Attractive prices.
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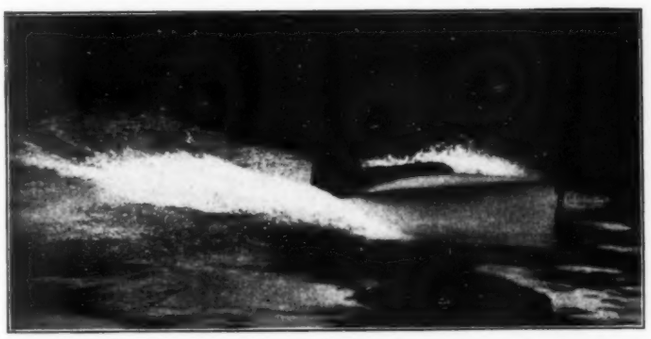

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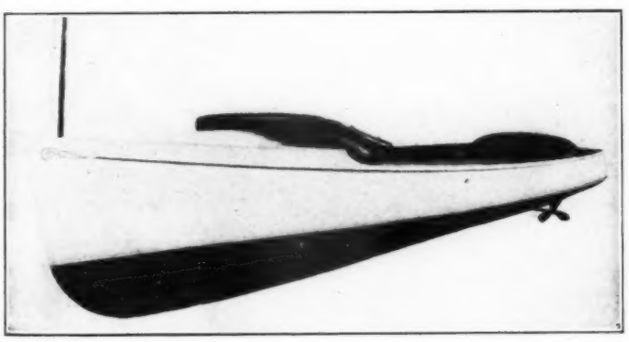

No. 51.—25 x 5 runabout; mahogany decks and interior; 4-cylinder Stamford motor; roomy; comfortable; prime condition; will be sacrificed for $600; worth $1,000.
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No. 65.—Pelican, 28 x 4 ft. 2 in.; model and lines identically same as famous Peter Pan II; auto speed runabout; beautiful mahogany decks and interior; mahogany lazy-backs; 4-cylinder Mercury; speed 21 miles. Great bargain, $1,300.
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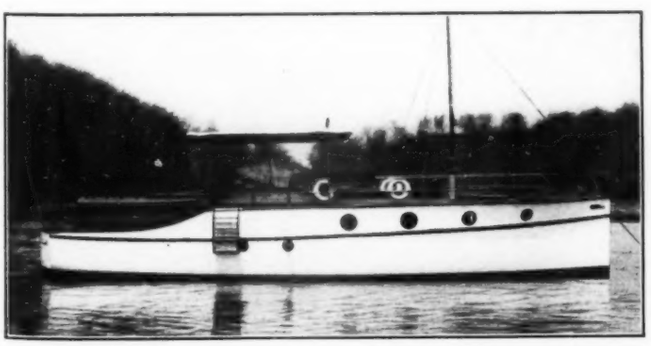

No. 67.—Brand new deep seagoing cruiser, 40 x 9 ft. x 3 ft. 6 in. draft; six cylinders, 5½ x 6; 1911 Scripps motor. Every comfort and convenience. Construction highest grade; appointments and furnishings splendid; up-to-date safety devices; boat can be controlled by one man; sleeps six; owner must sell account health.
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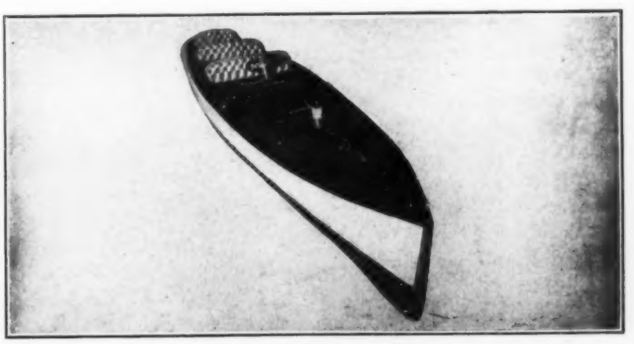

No. 43.—Magnificent 16 ft. yacht tender or runabout; 2-cyl., 19 H. P. Roberts motor; rear starting device; mahogany decks; motor hatches; coaming and interior; upholstered lazy-backs; beautifully finished and furnished; electric lights; auto controls; used one month; really new. Sell half cost.
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No. 376.—45 x 10 x 3; 25 H. P. Standard; recently overhauled. Price reasonable.
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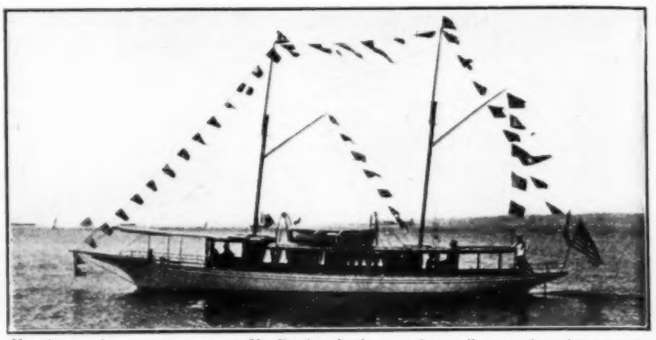
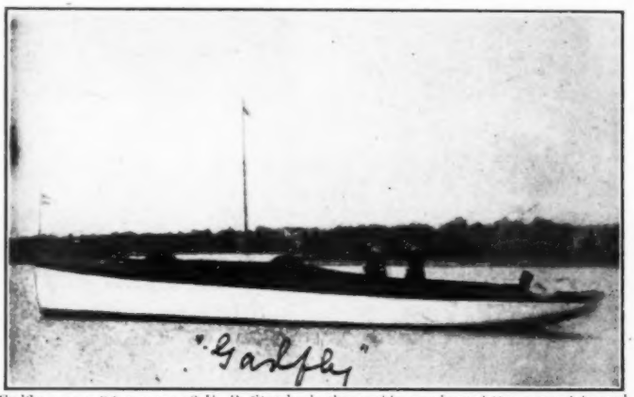


No. 8054.—67 x 10.6 x 3; 40 H. P. Standard; now has rail around entire top of house; good passenger boat; accommodates 40 outside; 30 inside.
Please mention MOTOR BOATING.

No. 688.—45 ft. x 10.6; 30-40 H. P. motor; price very low.
Please mention MOTOR BOATING.



Gadfly.—44 x 8.6 x 2.10; 18 H. P. Standard; thoroughly overhauled this year; delivered in commission; excellent bargain.
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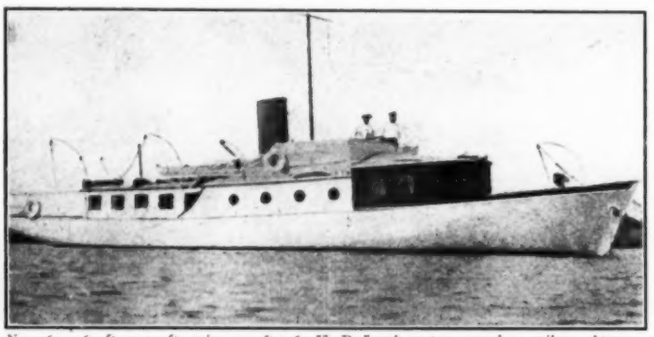

No. 261.—60 ft. x 13 ft. 2 in. x 3 ft.; 60 H. P. Lamb motor; speed 13 miles. Attractive price.
Please mention MOTOR BOATING.

No. 681.—40 ft. x 9 ft. 6 in. x 3 ft.; built 1910; 30 H. P.; 20th Century motor. Probably best boat of this type built.
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No. 907.—33 ft. x 9 ft. 2 in. x 3 ft.; 12 H. P. Globe; speed 9 miles; cockpit 10 ft. Price very low.
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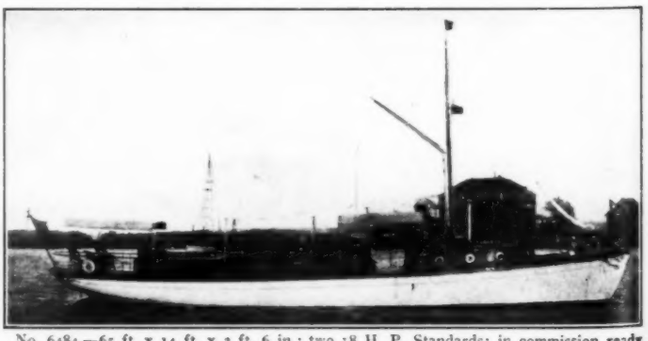

No. 6484.—65 ft. x 14 ft. x 3 ft. 6 in.; two 18 H. P. Standards; in commission ready for immediate service; excellent condition.
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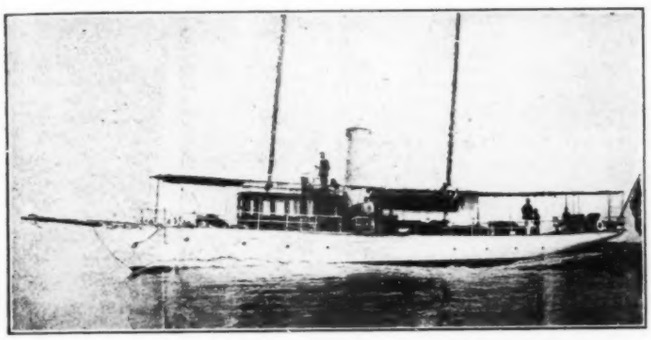
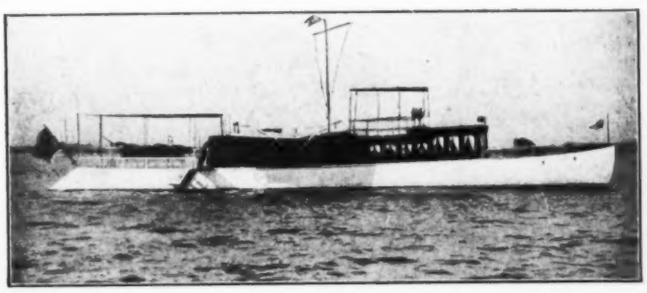


No. 2738.—95 ft. steam yacht, steel; one double, two single staterooms; speed 14 miles.



No. 1134.—74 ft. cruiser; 100 H. P. Speedway motor; good accommodations; speed 15 miles.
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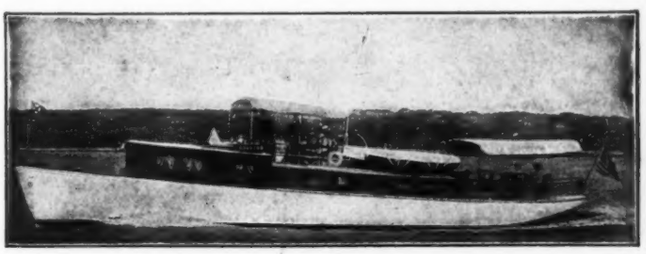
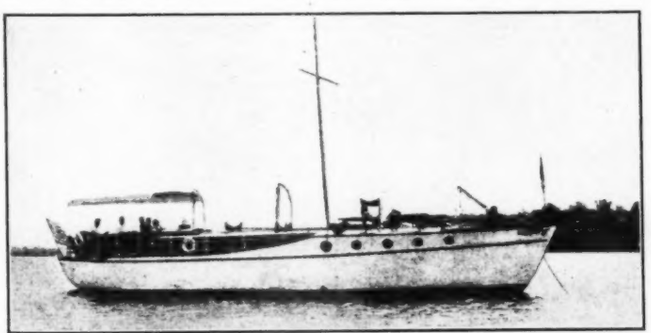
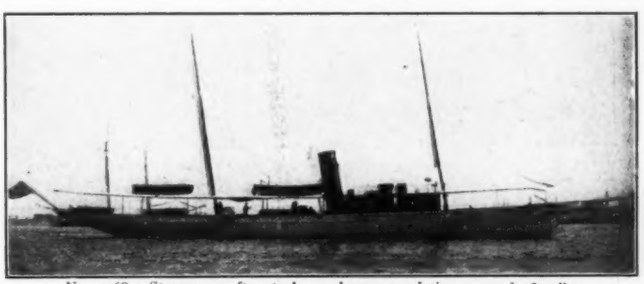
No. 886.—93 ft. cruiser; two 300 H. P. Standard motors; speed 23 miles.



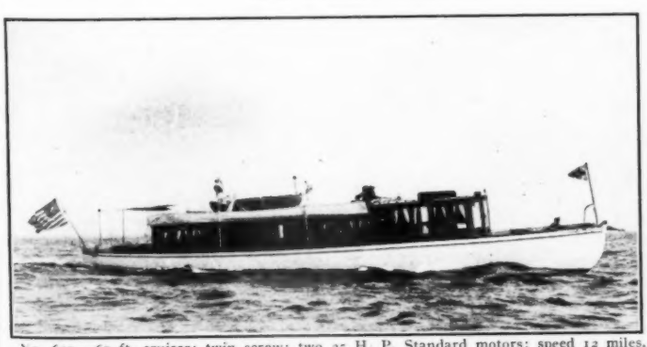
No. 853.—65 ft. cruiser, twin screws; Standard motors; good accommodations; speed 12 miles.
Please mention MOTOR BOATING.



No. 906.—50 ft. cruiser; Standard motor; 11 miles; double stateroom; two double berths in cabin.



No. 3068.—Steam; 145 ft.; steel; good accommodations; speed 18 miles.
Please mention MOTOR BOATING.



No. 637.—67 ft. cruiser; twin screw; two 25 H. P. Standard motors; speed 12 miles. Low price.
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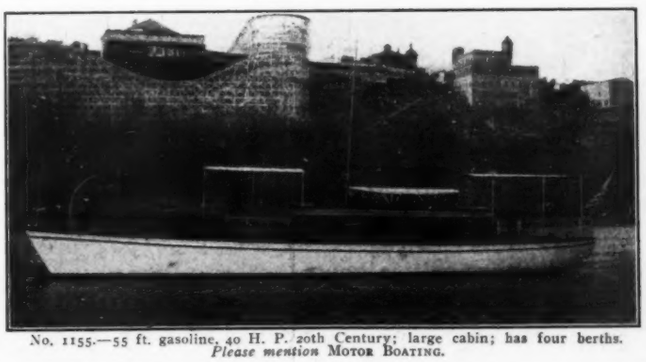

No. 1155.—55 ft. gasoline, 40 H. P. 20th Century; large cabin; has four berths.
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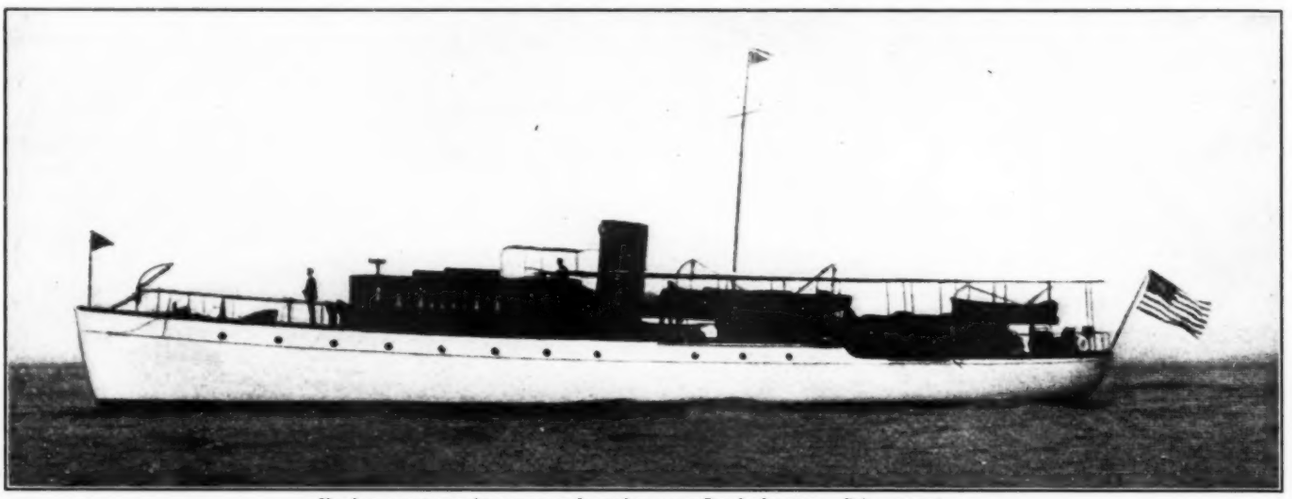

Handsome motor yacht, 110 x 17 ft.; twin screw; Standard motors. Price attractive.
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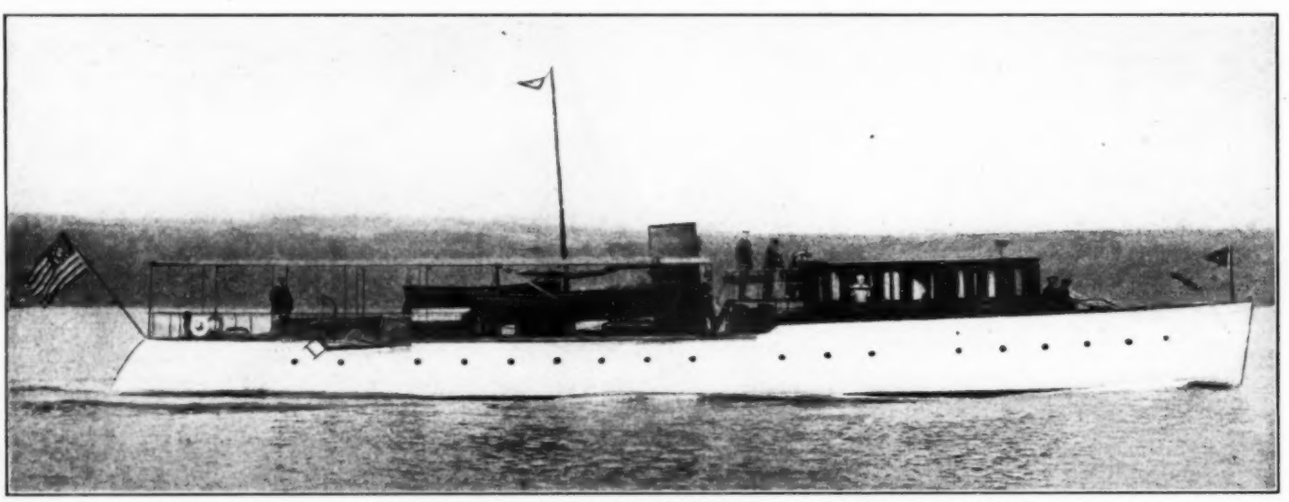

Modern motor yacht, built 1910; 98 x 15 ft.; twin screw; Standard motors; electric light; lavishly furnished.
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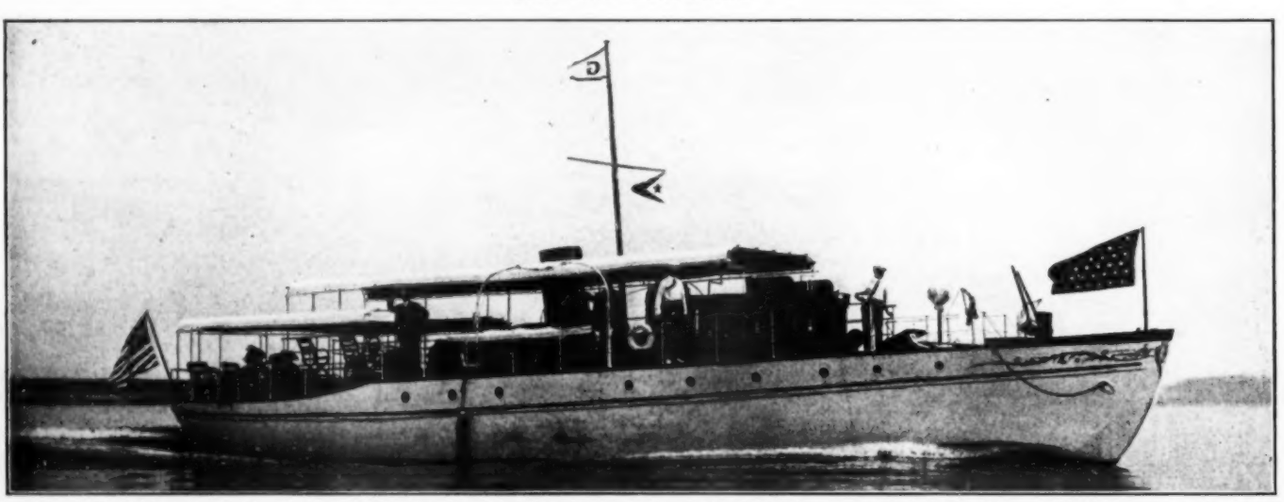

No. 2804.—Handsome motor yacht, 75 ft. x 15 ft.; twin screw; Standard motors; pilot house, large saloon, 2 staterooms; roomy gally and crew's quarters; electric light; 2 boats, fully equipped.
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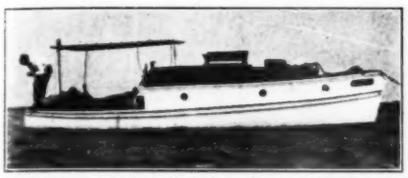

For Sale—30 ft. raised deck cruiser; 15 H. P. Ferro; fully equipped; electric generator, switchboard, cabin and running lights, toilet, cushions, searchlight, ice box, running water, wash basin, etc. In every way an up-to-date boat, in first-class condition. $1,000. Chas. Hallock, Foot 56th St., Brooklyn.

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FOR SALE—at 40% on the dollar—Cabin Cruiser "Voyager"; length, 55 ft., beam 8½ ft., 2 cylinder, 2 cycle, 35-40 H. P., reverse gear, magneto, electric lights, actual speed, 10 miles an hour, gasoline capacity, 110 gallons, standing cabin with pilot house, interior of cabin finished in oak and plate glass, pilot house contains steering wheel, ice box, clothes closet, side board, and seats on each side which extend to full length berths, engine room amidships, after cabin consists of owner's state room containing double berth and toilet with after companionway leading to a large after deck fitted with chairs. This boat is in commission, absolutely sound and perfect, very seaworthy, with excellent accommodations, an ideal cruiser for inside and outside use. We are prepared to make demonstrations and price will be quoted on application. Detroit Boat Co., 1256 Jefferson Ave., E., Detroit, Michigan.

QUICK—Houseboat, 51x16; buffet, dresser built in, bath, etc.; half-cabin launch, 35x7; 15 H. P. Buffalo; cost $4,500. Admirable club quarters. Sacrifice at $2,000. Dr. Wm. Pilcher, Jonesville, La.

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A change in our line of boats makes it impracticable to install the above engines, and in order to move our stock we are quoting prices less than cost. Order early and avoid being disappointed.
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$6.000 50 ft. power yacht, $3,800; building for Southern winter delivery; sleeps 11; separate saloons; speed 15; beautiful lines; mahogany and oak finish. Modern Yacht Co., Bath, Maine.

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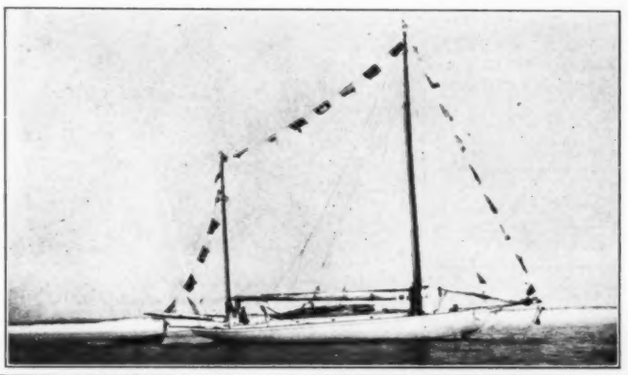
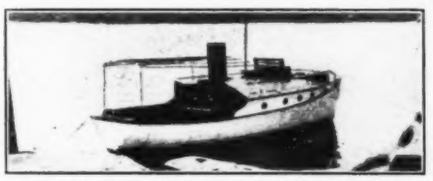
Will dispose of a few boat house lots, 25 x 90, for $300 per lot on the Great South Bay at Seaford, L. I., 30 miles from New York. For a term of years I will lease bungalow plots, 50 x 75, facing the Atlantic Ocean at High Hill Beach, $25 per year. Have also some very fine home sites, 20 x 150, $300 per lot, at Seaford, L. I. Not less than two lots sold to one buyer. The above proposition is worth investigation. From this location there is fine fishing, bathing, motor boating and excellent roads for autoing, also fine duck shooting. Owner, S. E. F. Spyve, 1238 Pacific St., Brooklyn, N. Y.



No. 483.—For sale or charter—Very desirable centre-board auxiliary yawl; 54 x 35 x 15 x 3.3 ft draft. Sails new 1910. Speed under power 6 miles. Excellent accommodation. Best of size and type available. In commission. Price attractive. Cox & Stevens, 15 William St., New York.



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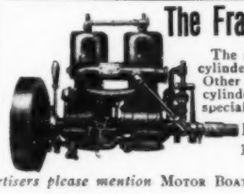

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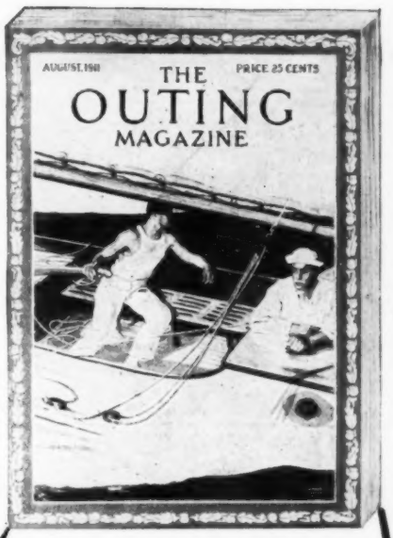

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Among the Clubs.

(Continued from page 53.)

Philadelphia Yacht Club, Philadelphia, Pa. The results of the flag day regatta held by this club at Essington were as follows:

CABIN CRUISES UNDER 40 RATING.

Name.	Owner.	Racing Length	Time Allow	Elapsed Time	Correct Time
Pasadena,	Geo. V. Dotterer	37.44	5.18	2.56.16	2.50.58
Ben	Riley, George A.				
Bilyeu		39.24	.03	2.59.42	2.59.39
Lesbia,	Jos. Price	39.26	Scratch	3.10.16	3.10.16
Bobolink,	R. G. Williams	23.04	63.31	4.15.00	3.11.29

CABIN CRUISETS 40 RATING.

Name.	Owner.	Racing Length	Time Allow	Elapsed Time	Correct Time
Barota,	James K. Clarke	61.11	Scratch	1.37.00	1.37.00
Marguerite,	II, A. B. Cartledge	53.10	10.48	2.15.53	2.05.05
Chelwood,	R. K. Lenning	40.14	37.22	2.43.27	2.06.05
Ilys,	J. G. N. Whitaker	46.17	22.57	2.34.38	2.11.41
Pickaninny,	J. V. Bell.	41.58	33.34	2.52.37	2.19.03

The Pawtuxet Motor Boat Club, Pawtuxet, R. I., will maintain a newly established light to be known as the Pawtuxet Cove light. It will be maintained from May 1st to Nov. 1st each year, and is a fixed red lens lantern light seven feet above the water, at the end of the pile of rocks at the northerly end of Marsh Island.

The South Coast Yacht Club, California, conducted a motor boat race around Catalina Island on June 11th, in which the motor boat Campbell, owned by Joe Fellows, won first place; Klattawa, Charles Fulton, second, and Eclipse third. Mystery and Iroquois, the other two entrants in the race, crossed the line a few minutes later, with only two of the cylinders of their engines running. The course is 66 miles.

The National Yacht Club, Brooklyn, N. Y. In the power boat race over a 29¾-mile course from Westlawn to the Southwest Spit buoy 5, off the point of Sandy Hook, to the Westbank light and home again, first place was won by F. D. Gheen's Kitsix, elapsed time 2-31-43; second, R. Heinke's Suis Moi. E. F. Luckenbacks's Empire with elapsed time of 2-46-21, was disqualified for not passing the Southwest Spit buoys.

The Los Angeles Motor Boat Club, Los Angeles, Cal., have elected the following officers for the ensuing year: Commodore, E. J. Louis; vice-commodore, Roy L. DeCamp; rear-commodore, Roy C. McClay. These provisional officers, together with four others, will compose the club directorate. The board of directors is Roy F. B. Shaver, Clarence J. Black, O. C. Smith and Dr. W. N. Vilas.

Wethersfield Cove Yacht Club, Connecticut, are looking forward to the opening of their new club house, the building of which is progressing rapidly. The officers of this club are as follows: Commodore, D. D. Austin; vice-commodore, Joel W. Johnson; rear-commodore, H. C. Warner; secretary-treas-

(Continued on page 74.)

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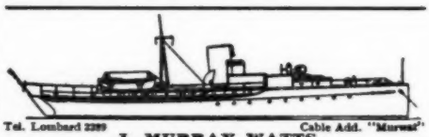

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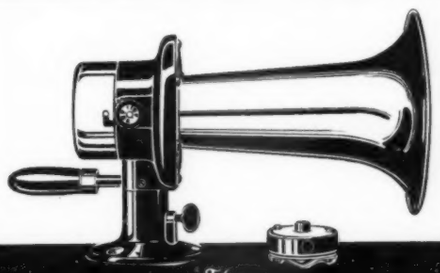

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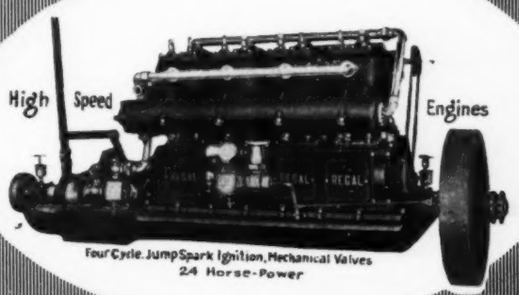

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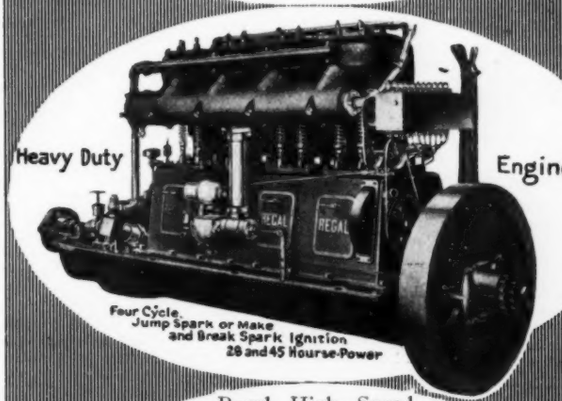

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Among the Clubs.

(*Continued from page 72.*)

urer, S. R. Braman; trustees, James Preu, E. A. V. Kendall; trustees to January, 1913, E. N. Way, L. Bosworth, Sr.

Lakewood Yacht Club, Rocky River, Ohio, will hold its third and fourth races for all classes on August 5th and September 2nd respectively. The races are run over the rectangular power boat course of 2½ miles per lap.

National Association of Engine and Boat Manufacturers is again calling attention to the fact that the National Boat Carnival of 1911 will be held at Huntington, L. I., Sept. 4 to 9, inclusive. This year's carnival will be held under the auspices of the Motor Boat Club of America, and it is planned to make the event the biggest possible demonstration of the growth of the motor boat industry. Entries may be made with the secretary, Ira Hand, 29 West 39th Street, New York City. A file card on which to give particulars of the entrants is furnished by the association.

The Des Moines Power Boat Club recently held its first regatta. Among the events contested were five for motor driven craft, over a two-mile course. These were won as follows: Class B launches, 2 to 4 h.p., won by Minnehaha (S. E. Hugh), 11:46; class E motor boats, 4 to 6 h.p., won by Elsie (J. M. Meanor and B. Warfel), 17:33⅘; class D motor boats, 6 to 8 h.p., won by Helen (John Kiley), 14:22⅖; class A motor boats, above 10 h.p., won by Demon (J. T. Cassell), 6:40. Race for winners of classes A, B, C and D, won by Elsie, 15:04.

The New York Yacht Club has distributed General Order No. 2, which gives the programme for its annual cruise as follows:

The Squadron will rendezvous off station No. 10 Glen Cove at 5 p. m. on Thursday, August 3rd.
Captains will report on board the flagship at 9 p. m.
Reception on board the flagship at 9:30 p. m.
Friday, August 4th, Squadron run, Glen Cove to Morris Cove.
Saturday, August 5th, Squadron run, Morris Cove to New London.
Sunday, August 6th, at New London, the Squadron will dress ship at morning colors.
The squadron will illuminate at 9 p. m.
Monday, August 7th, Squardon run, New London to Fort Pond Bay.
Tuesday, August 8th, Squadron run, Fort Pond Bay to New Bedford.
Wednesday, August 9th, Squadron run, New Bedford to Newport.
Thursday, August 10th, at Newport. Races for Astor cups.
Friday, August 11th, at Newport, race for the King's cup.
Saturday, August 12th, the Squadron will be disbanded.

The Jubilee Yacht Club, of Beverly, Mass., has filed protests at Washington against what is claimed to be unwarranted interference with the motor dory races on June 17th; the contestants were overhauled by the custom house boat in order to ascertain whether they carried equipment required by law, although some of the boats had previously been inspected. The explanation given by those on board the government boat was that there was a new inspector aboard.

New Rochelle Yacht Club, New Rochelle, N. Y., held a race for motor boats of all types owned by club members on June 17th in which there were 19 entries. The race was between Premium Point and the red spar buoy of Motts Point and return. The distance was twice covered, 18½ miles. L. D. Huntington, Jr.'s Elizabeth was the winner of the 30 to 40 class. F. Brannan's boat Vincent won the 40 to 50 class, and George W. Quintard's Milwin (the scratch boat in class 3) won in the 50 and over class. The regatta committee is composed of G. P. Cranberry, M. S. Kattenhors and A. E. Eldridge.

Colonial Yacht Club, New York City. On July 15th was held the annual race of twenty miles for the Commodore's Cup on the Hudson river. There were nine starters, all of which finished. The boats all received points for the annual trophy which is awarded by E. L. Mahnken to the owner of the boat which scores the greatest number of points for the season in races held under the auspices of the Colonial Yacht Club. The order in which the contestants finished was as follows:

Pos.	Boat and Owner.	Time.
1	Catherine, James A. Donigen	1:29:50
2	Camisteo, N. J. Baker	1:31:54
3	Rosa, H. Cullen	1:32:42
4	Virginia, H. M. Betz	1:32:44
5	Volsrey, Captain Rohrer	1:32:49
6	Scotland, Charles Stone	1:35:04
7	Lady Betty, H. J. Russell	1:36:23
8	Grace, Captain Totten	1:36:49
9	Alma II., Captain Pratt	1:37:42

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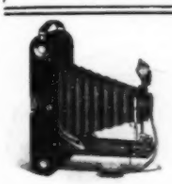

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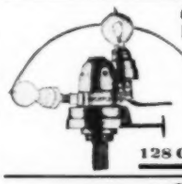

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IF YOU DIDN'T USE

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"The Varnish That Won't Turn White"

If you didn't use it at the beginning of the season, your boat needs varnishing now.

Ordinary varnish turns white in water; that turning white shows certain chemical and physical alterations caused by the dampness—alterations that do the varnish no good and which shorten its life.

Valspar does not turn white in water; water does not affect it chemically or physically, and it lasts as well on a boat as indoors. Therefore when you refit

Use VALENTINE'S VALSPAR "The Varnish That Won't Turn White"

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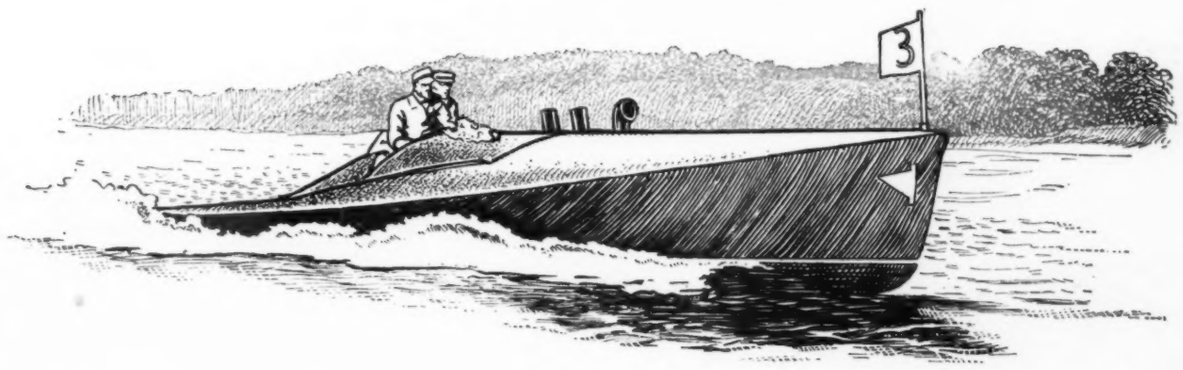

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The One You Will Ultimately Buy.

The success of the Paragon Gear has been due, not to a line of "hot air" advertising, but to the fact that it is

Designed right
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You don't take a chance when you buy a Paragon.

Ask the man who uses one.

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We make Hoods with either Brass or Wood Frame. Life-Preserver Cushions that will pass inspection and floating Equipment for Pleasure Boats. Catalogue Free.
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Yachting Oilskin Coats
The Famous "Manhattan Make" (Made in yellow only)
Absolutely waterproof under all conditions.
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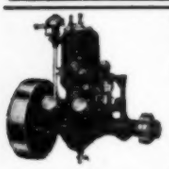

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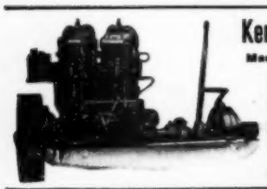

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Anti-Fouling, Green or White
Most powerful preventive of marine growth produced. For wood or steel. Not a copper paint. Non-corrosive.
Absolutely Guaranteed
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Holliday Motors and Reverse Gears
Famous for Long, Steady Service
Agents Wanted
HOLLIDAY ENGINEERING CO.
751 Bunker Street, Chicago, Illinois

The Run to the Azores.

(Continued from page 42.)

"During the 48 hours we lay at our sea anchor the wind was too heavy to face, but for the most part it did not blow harder than 30 miles an hour. The higher velocity attained at different times came at intervals and in the form of squalls in the storm, but did not last long.

"When we found that it was no longer possible to run before the gale, which came up out of the southwest, over our starboard quarter, we decided to heave to. We did not come to this conclusion until we saw that it was absolutely necessary, for Sea Bird, loaded as she was and with only jib and jigger set, was tearing along through the gathering seaway at a tremendous speed directly on our course. We were delighted with the speed we were making and rather welcomed the gale than feared it, but when the sea, which had been rising steadily as a result of the pressure of the wind, became so great that we were in imminent danger of a wave crashing down on our after deck and sweeping one of us off, the skipper decided it was time to heave to and face the gale rather than keep on running, which had become almost impossible.

"Rigging our sea anchor was no joke. We had its component parts constructed before we came away, but it had to be put together. The sea anchor we used, which is lowered in the water in the form of a drag, retarding, but not entirely stopping, the backward motion of the boat, consisted of a common two-fluke anchor, over the bottom of which we fastened aboard all prepared, having holes in it which allowed it to fit perfectly, and holes for lashings. This board we had lashed to the side of the deck house on the starboard side, over the oil cans, and it had to be taken off and rigged before the anchor was ready for service, no light job in the gathering sea.

"The work of bringing a vessel running before the gale around to the wind takes nerve and speed and is attended by grave danger. If the vessel is not brought up exactly at the right time and in the right manner she will be struck in the stern or broadside by a wave and perhaps turned over or wrecked by having her rigging torn off. With the skipper at the tiller and all of us watching our chance we brought her about smartly and when the next wave slid under us we were lying head to the sea and the anchor was overboard.

"The weight of the anchor made it drop several fathoms below the surface while the wind and the backward motion of the boat held the line out an an angle, almost taut. The pull of the surface of the board on the water kept Sea Bird's head to the sea, but not much ground was lost, and we were going in the general direction of the Azores, although we drifted a little north of our course.

* * *

Just as we go to press we have word that Sea Bird has reached Gibraltar.

New York to Lake Champlain.

(Continued from page 44.)

mont, with its hotels, parks, wide streets and fine harbor.

Beyond the Four Brothers to the west comes Schuyler Island, and beyond this Port Kent with its fine steamboat dock and snug little breakwater. The Bouquet River with its sandy shallows comes down from the west and next are the verdant shores of Valcour Island. Bluff Point is the site of the magnificent Hotel Champlain, and then comes Crab Island, beyond which the long breakwater at Plattsburg offers refuge.

From either Burlington or Plattsburg, if time permits, you may pass back of South Hero Island into the famous Back Bay, celebrated alike for its beauty and the excellence of its fishing and hunting, thence into Missisquoi Bay, the farthermost part of the lake.

Get This Power Boat at Maker's Prices
Buy Direct from Manufacturer and Save Dealers' Profits

This Toppan Dory as illustrated above is made of best guaranteed materials and is the standard rough water boat of the world. Safe and reliable—used by U. S. Government in all departments. Send stamp for circular. Ask for prices and facts about Toppan Reversible Motors, built with 2, 3, 5, 8 and 12 Horse Power—and if you want to build your own dory, saving exactly HALF, ask for **FREE KNOCK-DOWN BOAT QUOTATIONS.** **PRICE $150 AND UP. SIZES 16 FT. AND UP. PROMPT DELIVERY.**
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Two Cycle, Single Cylinder, 1½ H. P.
$45 Complete with fresh water equipment. This is one of three splendid marine engines described in our 1911 booklet.
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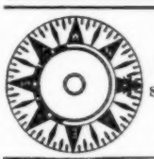

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can be adjusted at 7 different angles. The cooling effects it embodies reduce the escaping gases so they exhaust with practically no noise. It is compact, substantial and guaranteed.
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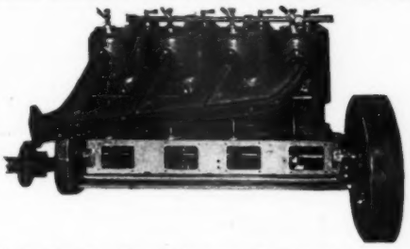
THELMA

Highest Standard of Precision and Efficiency



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We guarantee every Thelma Engine to give absolute satisfaction or your money back. References, All Detroit. Before you decide on an engine let us tell you more about the Thelma Engine. Catalogue mailed free.

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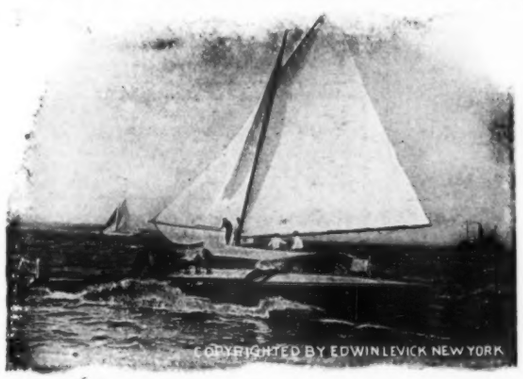
1840 ***Marine Accessories*** **1911**



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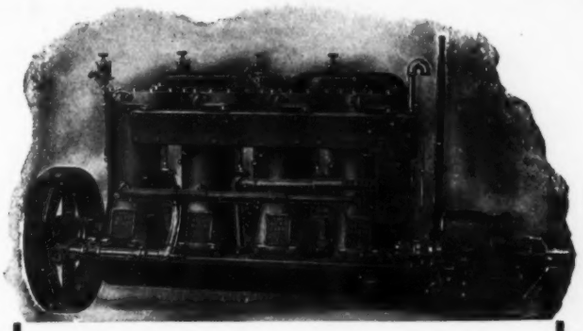

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That is the sort of testimonial we have received by the hundred from the users of this unapproachable gasoline engine.

They all say its the best, because of its capability in doing a tremendous amount of work, because of the ease with which it is run and controlled, because of its marked economy in the use of fuel, and because it never gets out of repair.

It has run 8,000 miles without a single hitch.

"The Automatic"
MARINE ENGINES

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Each cylinder in the engine is independent, which puts an end to breakdowns, insures simple operation, and results in the utilization of all the power to propel the boat, instead of in turning useless wheels and shafts.

You cannot know what comfort, what swift and easy running and what economy is — until you have installed The AUTOMATIC in your boat.

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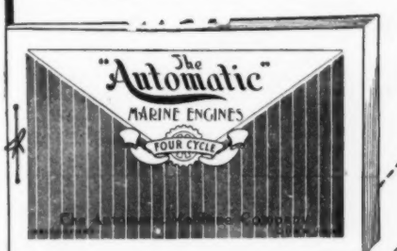

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Dear Sirs: Please send your new Catalogue.
Signed .....
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aboard the motor boat has a cold drink always ready. You can turn your engine over, start, and **three days** out from your home anchorage have an ice cold drink from THERMOS. If the weather is cold fill your bottle with a hot beverage. For **two days** there will be no change in the temperature.

For the few hours run or the vacation cruise THERMOS is a luxurious necessity.

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"Imitated, but Not Equalled"
Fine mechanical features.
Honest power ratings.
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An engine for every purpose. If you know what you require, we have it. If you are not certain, we can help you select. Heavy-Duty, Medium and High-Speed, Two-Cycle, Four-Cycle Marine, Stationary, Aero, Electric Lighting, Pumping Outfits.
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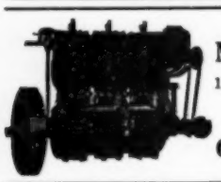

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1, 2 and 3 Cylinders, 3 to 50 H.P.
Two port system with springless check valves
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Goshen Motor Works
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NYACK, N.Y.
Have your naval architect submit plans and specifications to us, or we will submit plans and specifications to you. We build and repair boats. Tel. 362.
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Waterproof battery set	$3.00
Gasoline strainer	1.00
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Send for catalogue R, describing our Knock Down System. Frames, semi-finished and complete Hulls furnished. Designers and builders of all sizes Motor Boats, Cruisers, Tenders and Auxiliary Yachts. Robertson Bros., Foot of Bay St., Hamilton, Can.

With Driven Ships.

(*Continued from page 16.*)

crude-oil motors driving twin screws. She is being built at the Gironde Works & Shipbuilding Co.'s Yard, Bordeaux, to the order of Messrs. Prenthou, Leblond & Leroux, of Havre, who already own the 3,272-ton motor auxiliary Quevilly, which was illustrated in the May issue and which has just accomplished a voyage from France to New York and back. Quevilly is 322 ft. long by 45 ft. 5 in. beam, and 24 ft. in depth. She is equipped with two-six-cylinder 300 h.p. M.A.N. (Machinefabrick Augsburg Nurnburg) Diesel-type motors as auxiliary power. The leading dimensions of the France are: Length, 430 ft.; beam, 57 ft. 6 in.; draught, 23 ft. 6 in.

As I write I have just received a letter from the F. I. A. T. Company, of Torino, Italy, saying that they are building a Diesel marine engine of 10,000 h.p. to 12,000 h.p.

The German-American Petroleum Co. are also evidently convinced with the success of the crude-oil engine, as I hear that their 2,300 tank boat Excelsior is having her steam machinery removed, to be replaced with two 900 h.p. Carel motors, which are being constructed at the works of the Reshertig Schiffsbau A. G. This company is also having constructed two tank boats, each 400 feet over-all by 53 feet beam. These boats are to be constructed at the "Germania" Yard and are to be used for service between Europe and New York and the Orient respectively. Each boat will be equipped with a pair of Germania Diesel engines separately developing 2,300 horse-power.

It has already been made public that the Hamburg-American Line is having a 6,500-ton liner built by Messrs. Blohm & Voss to be fitted with twin 1,500 h.p. M.A.N. Diesel-type engines; but the same line has also ordered a sister vessel, the two motors for which, each also of 1,500 h.p., will be made by the Actiengesellschaft, Waser, Bremen. The Hamburg-South American Co. have also made a step in this direction, and a 6,000-ton ship is now building at the Howaldwerk Yard, Kiel, which is to be fitted with motors by Sulzer Bros., of Winterthur, Switzerland. Again, I hear that the Woermann Line are having a 1,000 h.p. craft engined by the M.A.N.

The Anglo-Saxon Petroleum Co., of London, who are the owners of Vulcanus, a 1,000 tons displacement motor tank ship that has been in service for some months, have a larger craft building by the Netherlands Shipbuilding Co. Her deadweight will be 6,230 tons, and a six-cylinder 1,100 h.p. Diesel motor of the four-cycle type is being fitted by Nederlands Fabriek Van Werktwigen en Spoorweg-Material, of Amsterdam, who constructed the 450 h.p. motor of Vulcanus. The latter firm are said to be building motors for a sea-going vessel of over 6,000 tons for the Societe Anonyme d'Armement d'Industrie et de Commerce, of Antwerp. At the Cockerill Yard, Antwerp, a 246 ft. vessel of 1,000 h.p. is being built to the order of the king of the Belgians for service at Leopoldsville in the Congo. Another boat for the Congo is building, I understand, by Augustin Gormand, of Havre, for the Société des Messageries Fluvials du Congo; Diesel motors of 400 h.p. to be fitted.

Messrs. Nobel Bros., the great Russian firm, already own several large motor craft, and are increasing their fleet in the shape of the Karl Hagelin, a new vessel of 1,200 h.p..

Britain is undoubtedly behind her continental neighbors, but quite a fair number of big motor craft have been ordered, and now that a large number of famous engineering firms and shipbuildrs have taken up the manufacturing of marine Diesel engines, developments can be looked for shortly.

Many large craft are being built, but accurate information is extremely difficult to obtain. But the foregoing is sufficient to show that the Diesel-type engine has a splendid future, not only in the world of marine commerce, but in naval service.

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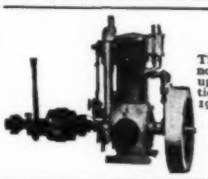

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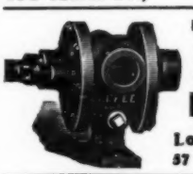

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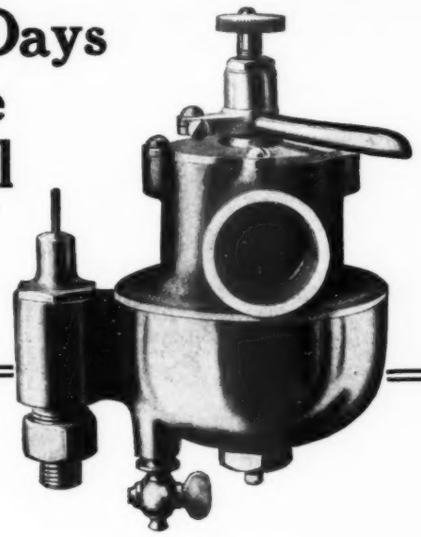

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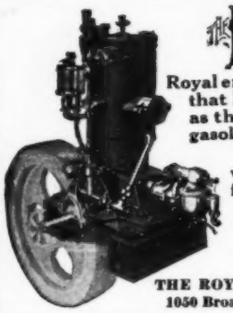

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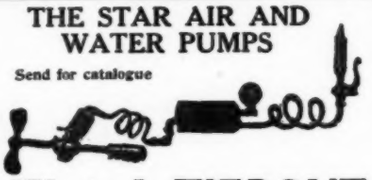

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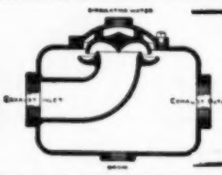

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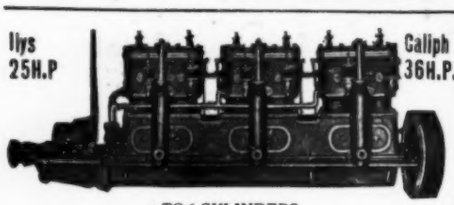

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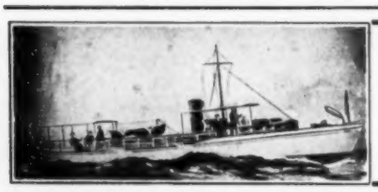

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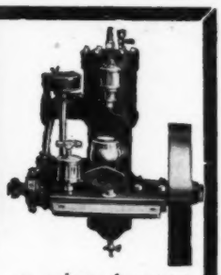

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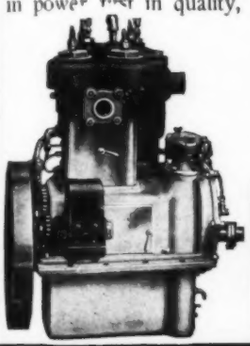

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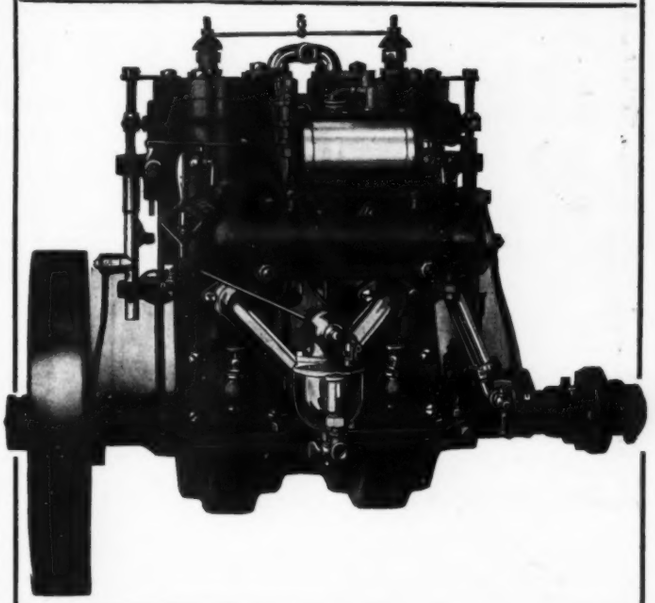

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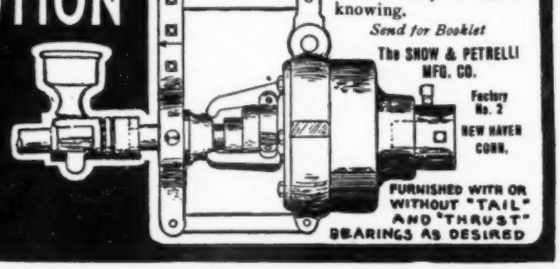

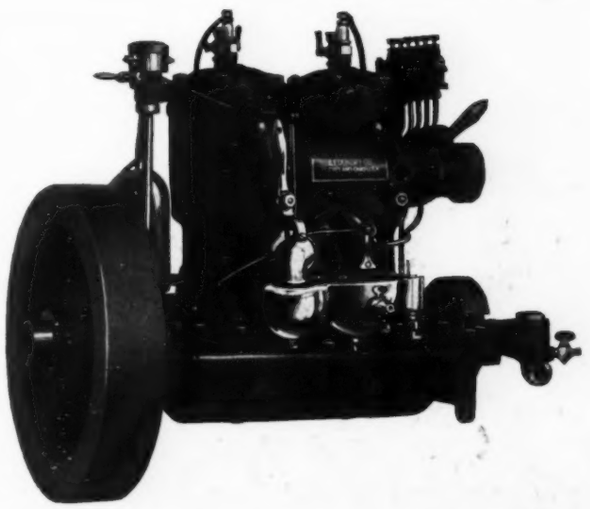

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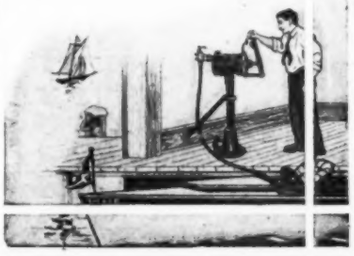

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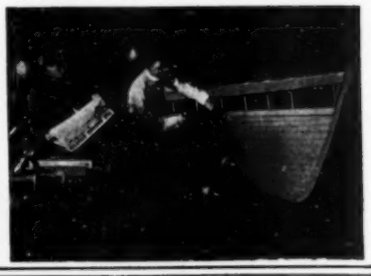

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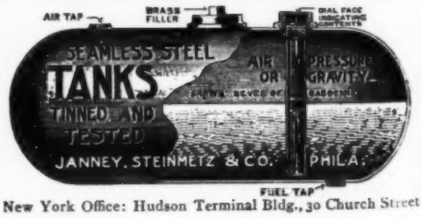

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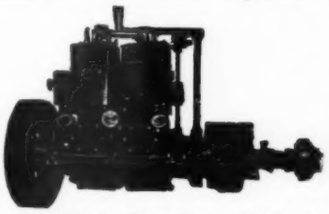

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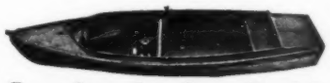

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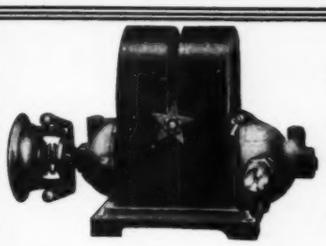

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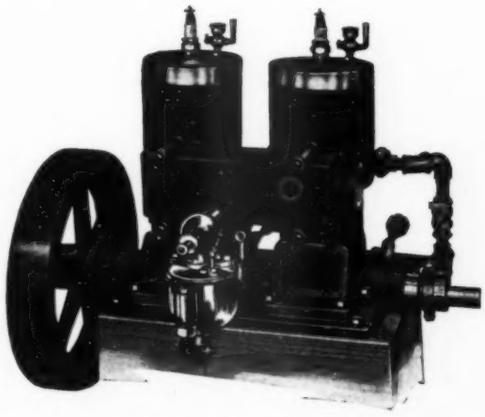

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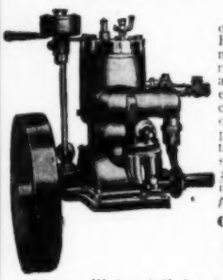

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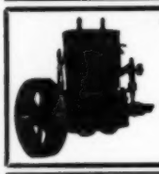

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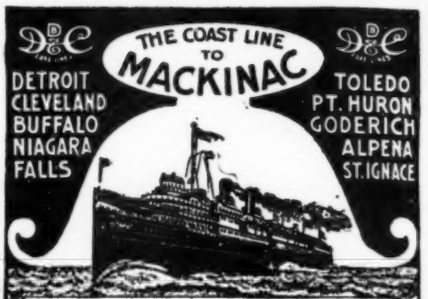

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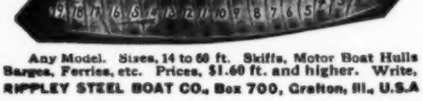

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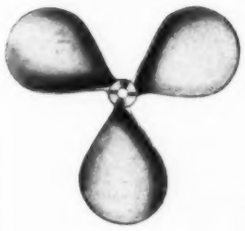

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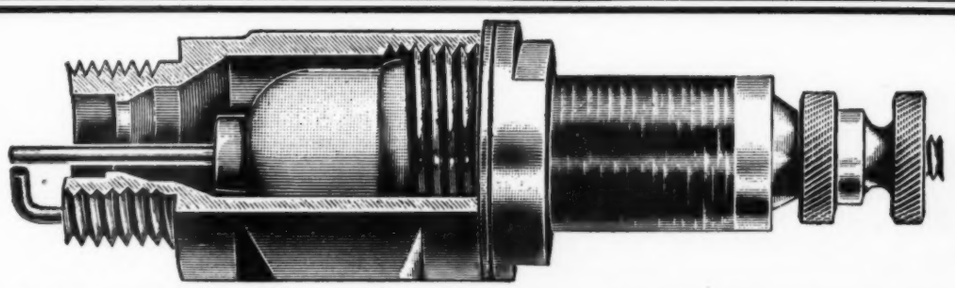

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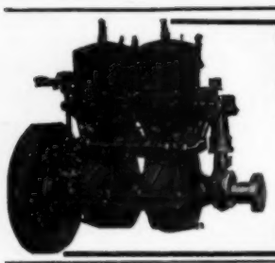

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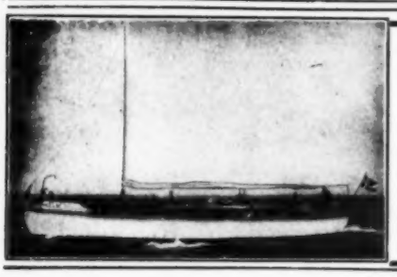

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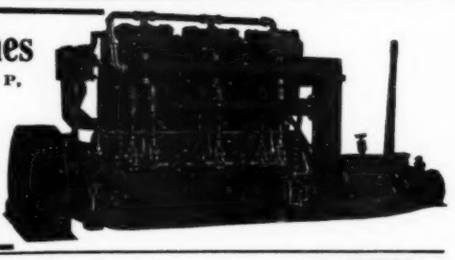

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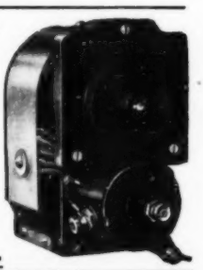

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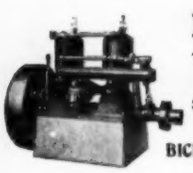

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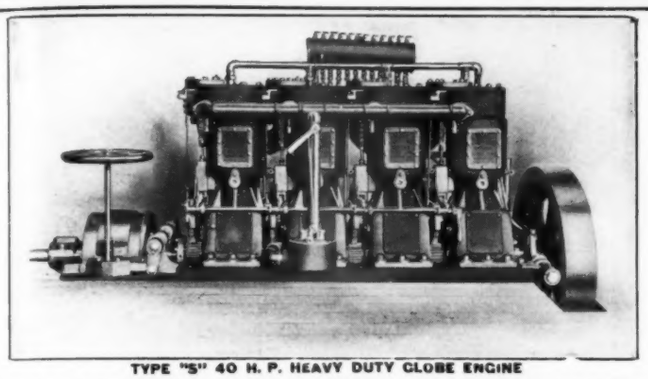

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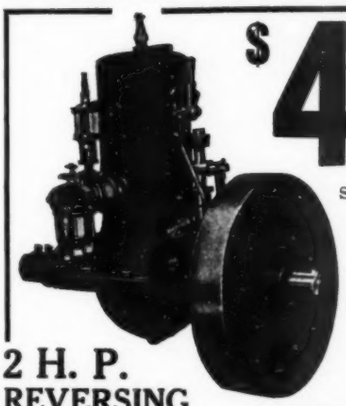

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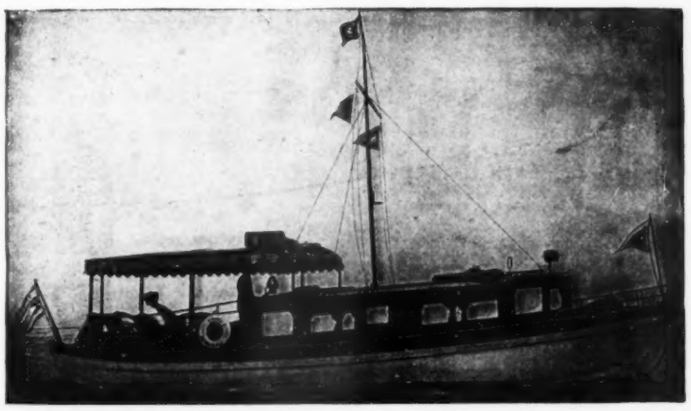

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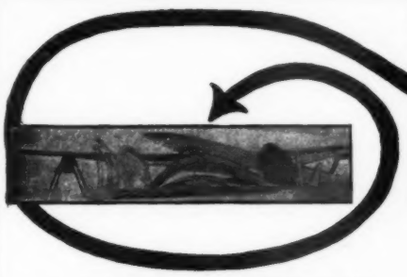

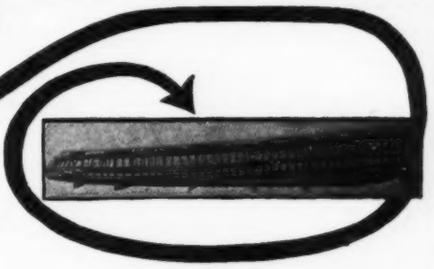

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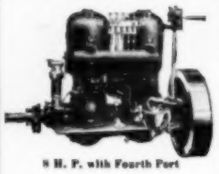
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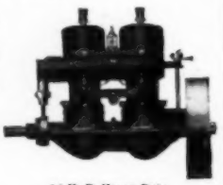
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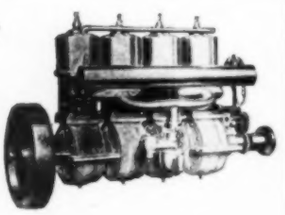

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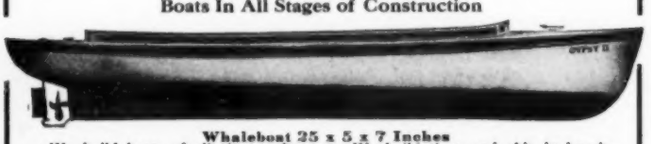

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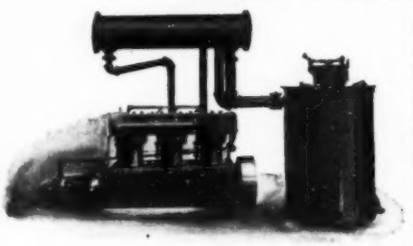
The Cheapest and Safest Marine Power



Operates on many of the good makes of four cycle gasolene engines at one eighth the cost. 25 to 5,000 H. P. sizes. Our catalogue tells you how to use and all about it We guarantee results.

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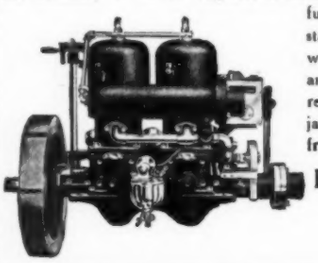
POWER SPEED & RELIABILITY

NOT light enough to be freakish. Not heavy enough for ballast, but both light and heavy enough for good hard work in either a racing, pleasure or working boat. A common sense engine with material, workmanship and price to match. Simple and reliable. It is not necessary to be an engineer or mechanic to operate a L-A motor, for we furnish all instructions necessary to install and operate; so the merest novice will experience no difficulty in setting up and operating. Our new catalogue is ready. May we send you a copy? It is jammed full of engine information, and free for the asking.



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Greater Power— Greater Speed—

—due to the *Perfect Carburetion* of the

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No moving parts—
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Long life—
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Great flexibility—
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THE EUREKA possesses an especially designed piston throttle that operates dependably at *all* speeds, in *any* weather and with *any* grade of gasoline. It is as flexible and certain in its operation as the two-cycle engine, and when properly adjusted to fit individual types of engines, cannot fail to give the utmost satisfaction.

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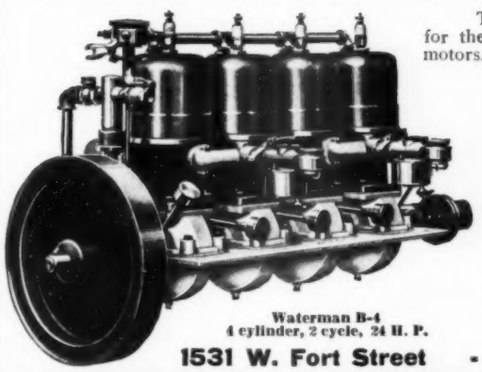
Ideal Speed Canoe Motors
GUARANTEED FOR LIFE



Waterman B-4
4 cylinder, 2 cycle, 24 H. P.

The many individual features of the Waterman Canoe Motors make them the ideal motors for the canoe. Any canoe can be readily converted into a speedy power canoe with one of our motors.

READ THE SPECIFICATIONS

Spun copper WATER JACKETS; tough aluminum alloy CRANK CASE; drop-forged CRANK SHAFTS of a special steel; BEARINGS extremely long and lined with our special bearing metal; CYLINDERS and PISTONS of our regular close-grained cylinder iron; PISTON RINGS of a special formula, mixed for piston rings and nothing else; PUMP of bronze (the plunger type); WATER MANIFOLDS and PIPING of brass and built up by our lock joint system—avoiding all bulky unions and hose connections. We use our own TIMER of the positive ball contact type, driven by DIE CAST GEARS of special composition—noiseless and long-wearing. EXHAUST MANIFOLDS on the 2 and 4 cylinder B are WATER JACKETED their entire length and are so arranged that after the water has circulated through this jacket, some or all of it may be piped overboard or it may all be carried into the exhaust. We also furnish sight feed lubricators on the intake manifolds for emergency use.

We make three models of the Waterman Canoe Motors, 1, 2 and 4 cylinders, ranging in power from 6 to 24 horse power. Prices within reach of all. Write immediately for our new catalog. Get all the facts.

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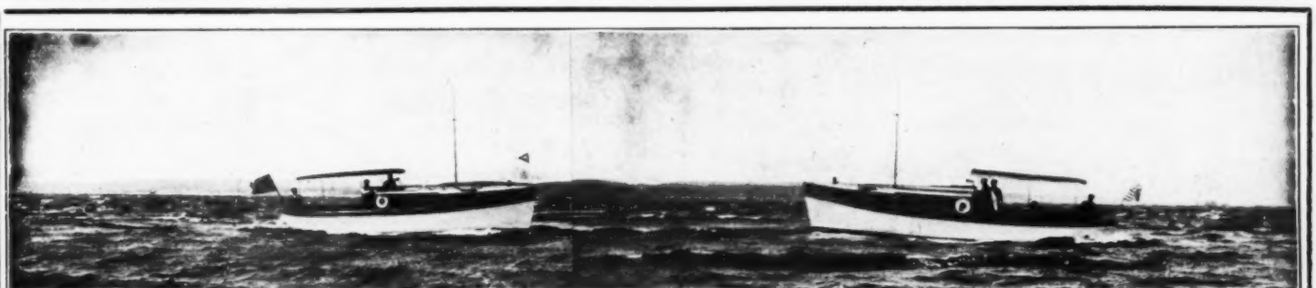
Waterman Speed Canoe

1531 W. Fort Street - - - Detroit, Michigan



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Exceptional offers in the cruiser line, 25-ft., 30-ft., 35-ft. and 41-ft. Raised Deck Type. These cruisers are equipped complete, ready for cruising at an extremely low price.

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Bargains in all kinds of Family motor boats, shallow draft boats and runabouts. These boats are the very best the market affords and reasonable in price.

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Tugs, Fish Boats, Small Passenger Craft or any special design of boat can be furnished. Let us figure on your new outfit.

YEARS OF EXPERIENCE HAVE TAUGHT US HOW TO BUILD AND EQUIP BOATS FOR EVERY REQUIREMENT

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MOTSINGER AUTO-SPARKER

Will Generate Electricity for Ignition and Electric Lights, Charging Batteries, etc. Suitable for all types and sizes of Gasoline Engines.

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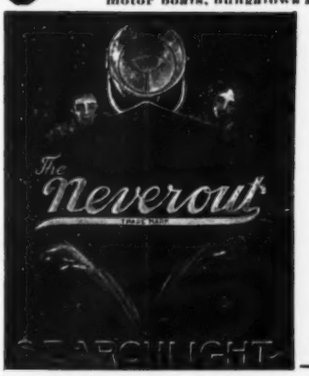
—tells all about the most practical lighting equipment for motor boats, bungalows and camps.



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Searchlights

make night trips safe as day; *Neverout Generators* furnish a constant supply of purified acetylene gas sufficient for both cabin and deck lighting. Require no vibration—instantly attachable for tent, bungalow and camp use.

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PROMPT, UNIFORM POWER DELIVERY

Every ounce possible of explosive energy is delivered against the cylinder head at the exact mechanical moment when it exerts its greatest force on the propellor shaft. No pounding with

The DOMAN Medium Duty Marine Engine

Note the Doman aluminum cover on reverse gear "T-head" cylinder; and with its other features is, up to date in every particular. All parts are accessible. It is evenly balanced, easy to understand. Engine here illustrated is 3 cylinder 15 H. P. Medium Duty. Other sizes from 5 H. P. to 75 H. P. We deliver each engine complete with Magneto, Force Feed Oiler, Propellor, Shaft, etc. Catalog free—when shall we send yours?

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12 TO 300 HORSEPOWER
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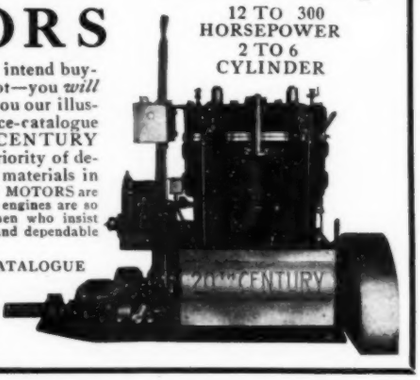
No matter whether you intend buying an engine now or not—you *will* sometime—let us send you our illustrated, descriptive, price-catalogue of TWENTIETH CENTURY MOTORS. The superiority of design, workmanship and materials in TWENTIETH CENTURY MOTORS are the reason why these marine engines are so widely used by motor-boatmen who insist on having the most durable and dependable motor made.



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isn't just a tail shaft with a propeller on one end of it. The Roper involves an entirely new, original and effective principle in speed control. In no other equipment can you find its unique advantages.

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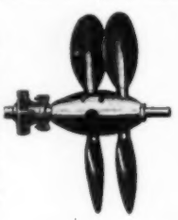

The Roper Safety Propeller gives you any speed, from absolute rest to full speed in either direction, on the instant, by the operation of one controlling lever, without affecting in any way the action, or requiring any adjustment of the engine.

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DAYTON ELECTRIC LAUNCH LIGHTING OUTFITS are made in all sizes, for all styles of motor boats. They double the value and pleasure of your boats.

With a Dayton Launch Lighting Outfit you can have bow and riding lights that never blow out; a searchlight to pick out your course, and cabin lights that make the inside of your boat as bright as day. Just turn a switch, and the light is there.

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For Everything from Canoe to Cruiser

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Build Your Own Boat

This picture shows one of our 45ft. cabin cruiser frames ready to take apart and crate for shipment. Everything is done right up to the point where planking is to be put on. One man can re-assemble this frame and have it ready for planking in six hours' time. Any man, experience unnecessary, can finish this boat and fit it with power for less money than he would have to pay for the cheapest 25ft. cruiser offered by any manufacturer of completed boats to-day. We carry a full line, from the canoe to the 65ft. cabin cruiser.

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You may not have time to build your own boat. Cabin cruisers are our specialty. Write us and we will convince you that other manufacturers cannot meet our prices on finished boats. Let us quote on your specifications for a boat of any type.

The superior excellence of our designs; beauty, seaworthiness, and speed in our boats; and a square deal and popular prices have brought us in the past five years from a small, unknown factory to rank among the largest and best known builders of both knock-down and completed boats in the land.

We make a specialty of knock-down frames for large cabin cruisers, but as a result of our frame business, can quote prices on finished cruisers that cannot fail to interest.

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Power 7 Times

This glass is especially adapted for marine use. It has a very large, clear field, brilliant illumination, and depth of focus. The Price is $33.75.

RELIABLE DEALERS SUPPLIED

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after you buy a

Loew-Victor Engine

Do not make the mistake of trying to "get along" with an inferior engine. You are simply inviting trouble and laying up hours of worry and work.

The most desirable engine in the marine field to-day in DESIGN, EQUIPMENT, DEPENDABILITY and PRICE is undoubtedly the LOEW VICTOR.

No plant is more modern—none equipped with more perfect machinery for the manufacturing of engines.

Every part of a Loew-Victor Engine is trued to a hair's breadth BY MACHINE—we never trust to hand work for it means lack of perfect uniformity in parts.

Every engine is thoroughly tested before it is shipped, and no possible precaution is overlooked in our endeavor to supply the most perfect and dependable engine possible.

Send for our FREE BOOK, which contains much valuable engine information and be sure to thoroughly investigate this line before you buy.

Loew Manufacturing Co.

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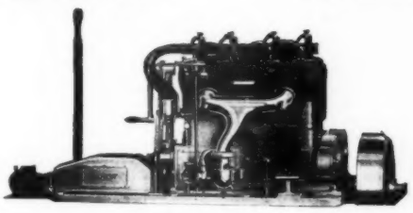

4-Cylinder Special—15-30 H. P.

MADE IN

1 cyl.	6 H. P.	4 cyl.	24-40 H. P.
2 cyl.	12 H. P.	4 cyl. (special).....	15-30 H. P.
3 cyl.	18 H. P.	6 cyl.	36-60 H. P.

Hundreds of owners are equipping their Yachts and Motor Boats with Pyrene.

Have you the same protection from fire, or are you taking a chance?

Ask us for literature and the name of nearest distributor.

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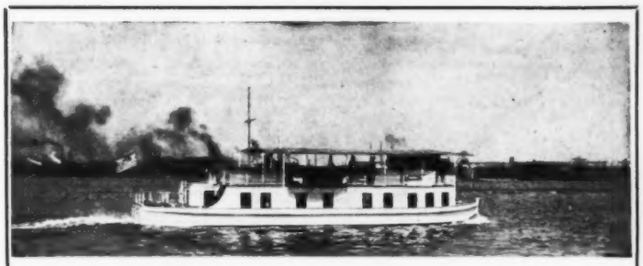


The launching of

The COCOPOMELO

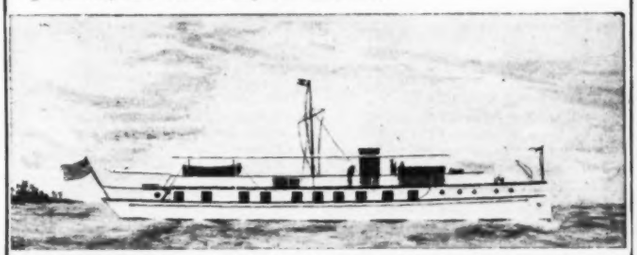
designed and constructed by us

called forth comments from all sides on this unique, new type of houseboat. Shallow draft enough to go anywhere inland in Florida because of its unique tunnel construction; speedy enough to satisfy any houseboat owners; comfortable enough for a permanent home.

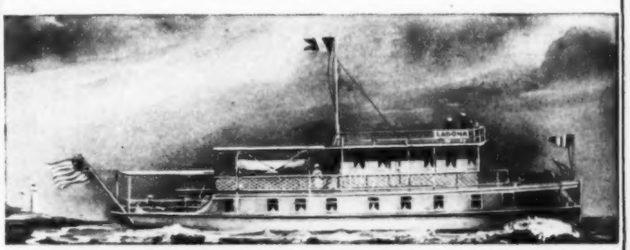
As a result of the exceptional ingenuity displayed in designing and constructing this original houseboat and the satisfaction given by it

we designed, and have just completed, two new houseboats of Cocopomelo type

Both of the following boats were completed on time, under a guarantee, and without any overtime cost:

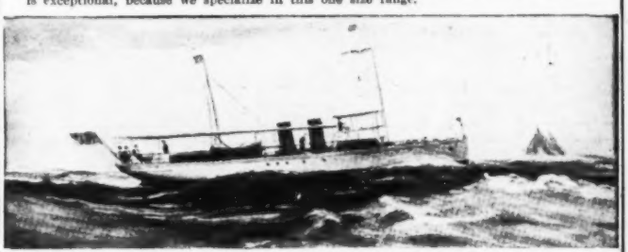


EDNADA III. A ninety foot yacht-houseboat of the Cocopomelo type, designed by us for Mr. George C. Thomas, Jr., and just delivered complete and furnished—under a ninety days' guarantee. Conforms to requirements of the Erie Canal in height, as well as width; has maximum draft for Southern waters, and has window shutters and free board for seagoing use.



LODONA. A seventy-seven foot houseboat of the Cocopomelo type—slightly more yachty in appearance—designed and constructed by us for a prominent member of the New York Yacht and Larchmont Yacht Clubs. Beam, 18 feet 8 inches; draft, 30 inches; twin screw and tunnelled costructions.

We can turn out speedy, compact, comfortable yachts of 60 to 100 feet in limited time under a guarantee—our equipment for the designing and construction of such boats is exceptional, because we specialize in this one size range.



SYBILLA II. An 82-foot flush deck yacht, designed and constructed by us, which is rated the finest boat of its class in these waters. Draws 4 feet 6 inches; beam, 13 feet 6 inches; water line, 75 feet; speed, 15 miles—and as luxuriously comfortable as anyone could wish.

You still have time to get a houseboat or yacht built for southern waters if you write at once for booklet describing and illustrating the best boats in this class.

Have your architect send us his plans on your motor boat or yacht for estimate.

Mathis Yacht Building Co.

Specialists in 60 to 100-ft. cruisers and houseboats

COOPER'S POINT, CAMDEN, N. J.

The Neverfurl Flag Staff

Will Not Rust
Flag Easily Removed

Your flag always unfurled to the breezes. With the "Neverfurl" Flag Staff the flag cannot wrap around the staff. Besides, after a sail, you don't take only the flag down—you unstep the staff with the flag—roll up—and stow safely away.

The staff is held into the deck by a bayonet lock and can be instantly taken in.

"Neverfurl" Flag Staves made for both bow and stern. Send for "Neverfurl" literature.

Ready for use $4.50 per pair

Novelty Mfg. Co.
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Safety First—Other Qualities Afterward

When buying life preservers, the safety must be absolutely assured before you can consider any other quality.

A-B-C Life Preservers

come first of all in safety, and besides are lighter, smaller and better in every way than cork, 2½ lbs. lighter and occupy ⅓ less space. Made of specially prepared waterproof South American wood-covered with best white duck or khaki, mildew, rot and water proof. Float indefinitely; easiest to swim with because so small and buoyant. Outlast cork. Approved by U. S. Inspectors and exceed Government requirements.

We also build wood, steel or bronze Motor Boats to order. Sketches and estimates gladly submitted. No catalog because we have no stock designs.

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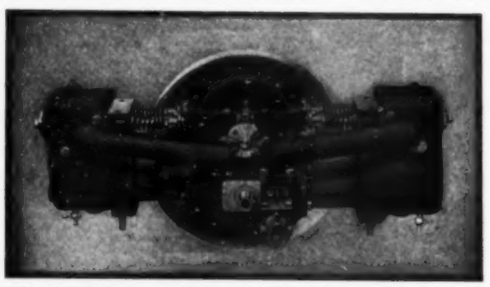
315 VERNON AVENUE - - - LONG ISLAND CITY, N. Y.

BEILFUSS MARINE MOTORS



Of the two cylinder opposed four cycle type.

The Motor which is surprising the boat owners in every locality wherever introduced, on account of their *compactness* (can be placed under seat if so desired), *economy* of fuel consumption, *non-vibrating* qualities, and their perfect *reliability*. When supplied with a good spark and plenty of gasoline they will run until stopped.

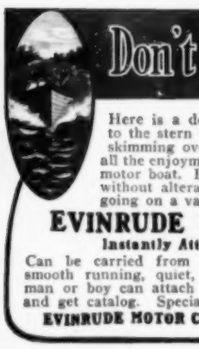
The owners of Beilfuss Motors are our best advertising medium. Why? Because they cannot say too much in their praise.

Write for circulars describing our 1911 style motors.

Thousands of unsolicited testimonials on file to prove the above claims.

Beilfuss Motor Co., 704 Saginaw St., E. Lansing, Mich.

Don't Row on hot days!



Here is a detachable motor that you can clamp to the stern of any rowboat in an instant and go skimming over the water 8 miles an hour with all the enjoyment and comfort of a high-price motor boat. Fits any shape bottom or stern without alterations to boat. Don't think of going on a vacation or auto trip without an

EVINRUDE Rowboat Motor

Instantly Attached or Detached

Can be carried from place to place. Is simple, smooth running, quiet, light and compact. A woman or boy can attach and run it. Write at once and get catalog. Special proposition to live agents.

EVINRUDE MOTOR CO. 215 Reed St., Milwaukee, Wis.

"SANDS'" MARINE SANITARY FIXTURES

Standard of the World

Plate S-30

The "Mohawk" Pump Water Closet, with Vitro Adamant round flushing rim bowl; composition combined supply and waste pump, self-closing foot valve. Oak seat and cover, and rubber bumpers, heavy nickel-plated brass post hinges.

Pump rough, complete as described $70.00
If with mahogany seat and cover, add 2.00

Weight: Net, 65 lbs.; gross, 146 lbs.

The pump is easy acting. The supply is operated by a self-closing foot valve. The supply and waste can be fitted for lead pipe or iron pipe connections.

Catalog "R" free upon application

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Largest Manufacturers in the World of
MARINE PLUMBING SPECIALTIES
22-24 Vesey St., New York, U. S. A.

Our bronze chains have **solid cast links**—not brazed—and are the strongest chains made for

MARINE PURPOSES

Especially adapted for rudder chains, passegeways, etc.

These chains, being bronze, cannot rust, nor will they corrode. No staining of woodwork possible.

SIZES, 3-16 inch to 5-8 inch diameter

and made in any length from one foot up.

Prices on application to

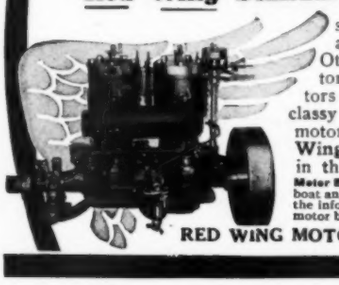
ALLISON BROS.
Manufacturers
1111 GRAND STREET HOBOKEN, NEW JERSEY

"If You Want to Move

When You Throw On the Switch, Install a Red Wing"

is the advice of one of our customers to everyone owning or about to purchase a motor boat. If you want a motor that "is very simple to control," "works like a charm," "runs fast on very little oil and always runs." "runs very smooth" (a few quotations from the hundreds of letters on file) in short a trouble-proof engine—investigate the

Red Wing Standard 2 Cycle Motor



shown here. It is made with 1, 2 and 3 cylinders—3 to 15 H. P. Other Red Wings, including motors for high speed work and motors up to 80 H. P., and also the classy up-to-date reliable Red Wing motor boats (equipped with Red Wing Motors) are fully described in the beautiful **Red Wing Free**

Motor Boat Book. Don't buy a motor or motor boat anywhere until you get this book and read the information on page 29. It's important to motor boat enthusiasts. Write to Dept. C 1.

RED WING MOTOR CO., Red Wing, Minn.

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THE NATIONAL MAGAZINE of MOTOR BOATING

The July issue of MOTOR BOATING carried 47% more advertising for 42% more advertisers than the July, 1910, issue. MOTOR BOATING was the only one of the five leading marine publications which did not show an actual loss in the amount of advertising for July against last year. MOTOR BOATING has the largest net paid circulation of all marine publications and is growing faster in both circulation and advertising than any other marine paper.

Judge an Engine and Boat By Its History

Don't buy an engine or a boat on promises.

Don't listen to talk about what the engine will do. Find out what it has done.

Compare the actual History of the engine and boat you thought best with that of the

ROCHESTER

ENGINE AND BOATS

Find (if you can) an engine of corresponding price whose record can equal the Rochester's.

For 12 years in every contest this engine has entered it has proved its surprising quality.

"She seems to be proof against trouble." That's what one racing owner says. You can't afford a faulty, "fussy" engine. It spoils all the fun. Don't make a mistake. Find out all about the Rochester engines and boats. Send for details and catalogue. Send *to-day*.

1910 Models, one to six cylinders, 4 to 48 H. P. Immediate deliveries. Mechanical oilers. Atwater Kent Ignition. Gasolene or kerosene.

ROCHESTER GAS ENGINE CO.,

106 Platt St. and Brown's Race
ROCHESTER, N. Y.

New York Agent.
928 Broadway,
N. Y. CITY.

Light Your Boat Right

Some dark night you will need a light that is just as dependable as those at home or office.

Dyneto TRADE MARK

For **LIGHTING**
For **IGNITION**

Type J Dyneto for Motor Boat Lighting

Type J Dyneto drawn by your engine, keeps a 3-cell, 6-volt storage battery in full working charge. Start engine from battery. Supply port and starboard lamps, search-light, cabin lamp, trouble lamp on cord. Write for full description and price on complete outfit. *Information and catalog free.*

The Dyneto Electric Co.

Dept. 4 Syracuse, N. Y.

(*Send for Automobile Lighting Catalog*)

Polarine

Best for all Makes of Marine Motors

POLARINE LUBRICANTS have been put on the market by the Standard Oil Company after exhaustive practical tests on different makes of marine motors.

POLARINE OIL

Polarine Oil is free from carbon and does not foul spark plugs, valves or cylinders. It insures the most compression and power with the least friction and wear.

Polarine Transmission Lubricant "A"

A semi-fluid oil; specially suitable for use in the reverse gear housing or timer in very cold weather.

Polarine Transmission Lubricant "B"

The all-the-year-around lubricant for reverse gearing and timer. Semi-solid.

Polarine Transmission Lubricant "BB"

A heavy, semi-solid lubricant; specially recommended for lubricating the propeller shaft within the sleeve when an inside stuffing box is employed.

Polarine Fibre Grease

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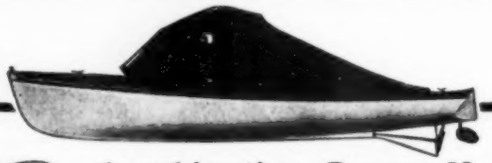

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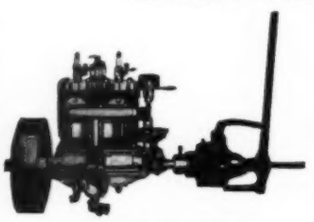

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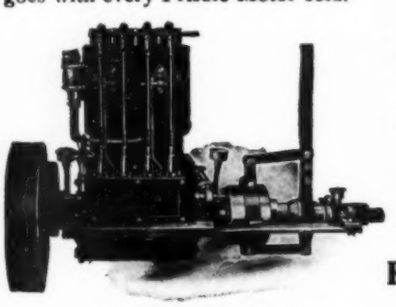

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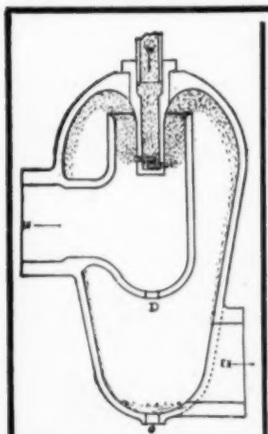

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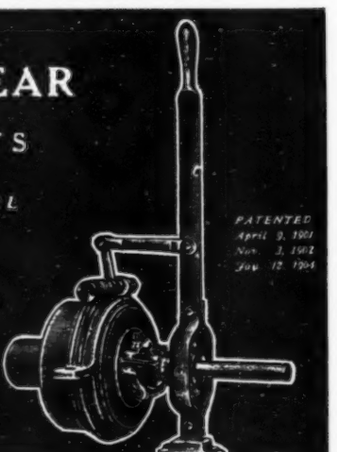

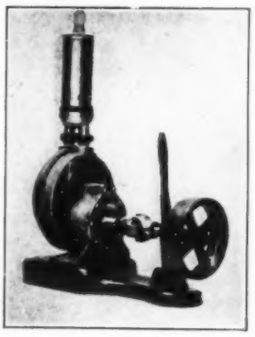

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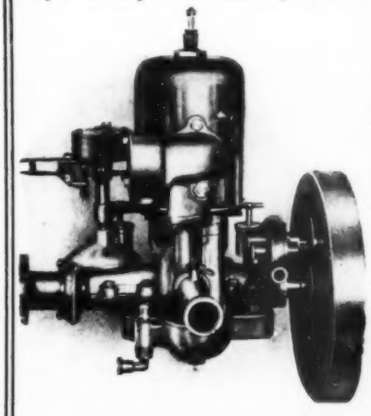

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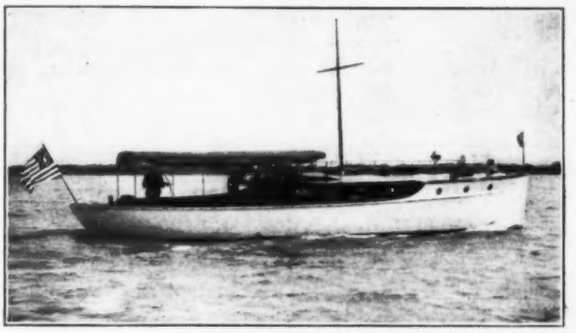

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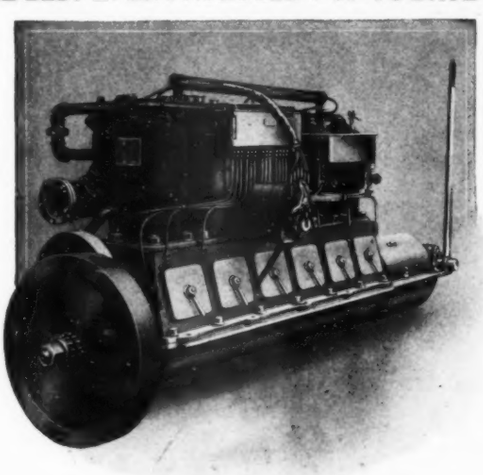

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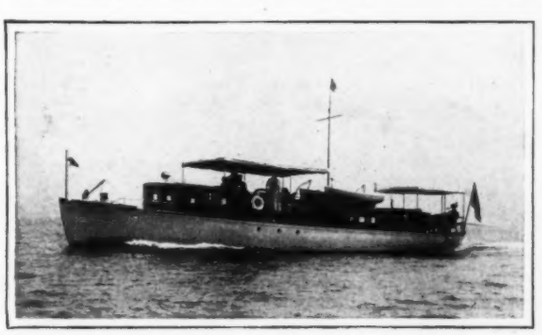

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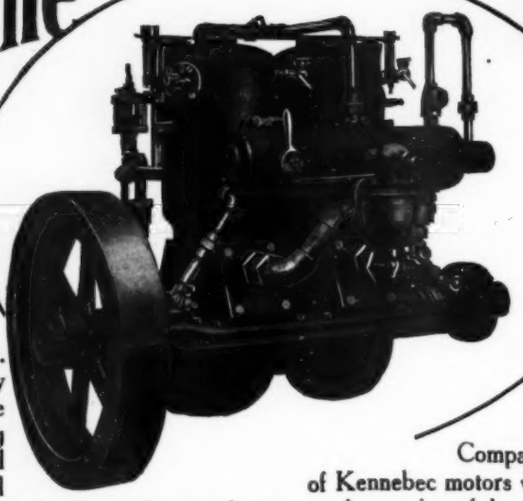

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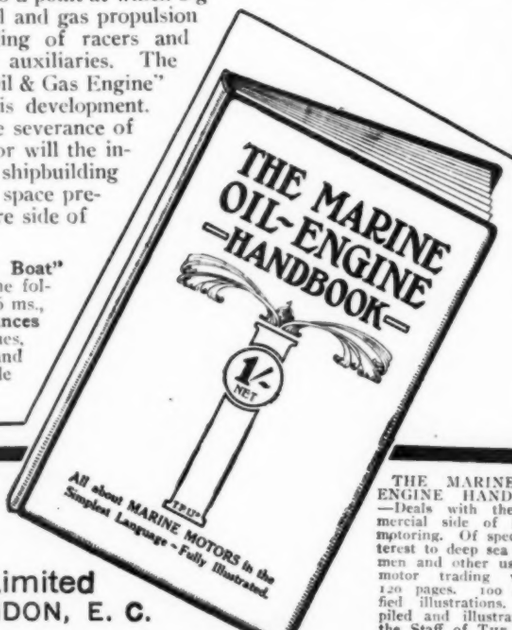

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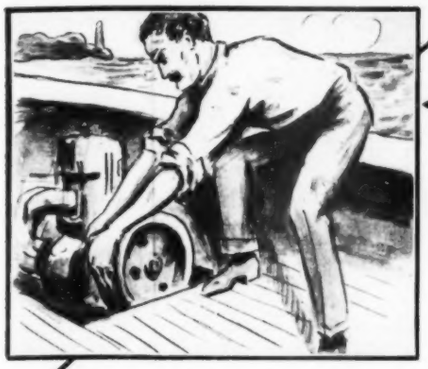

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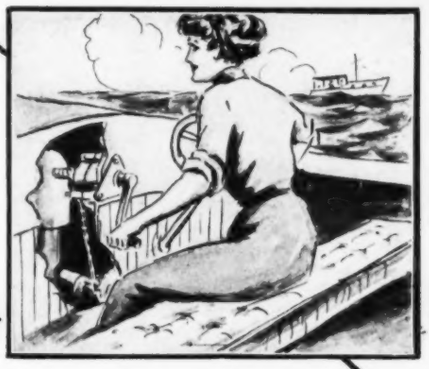

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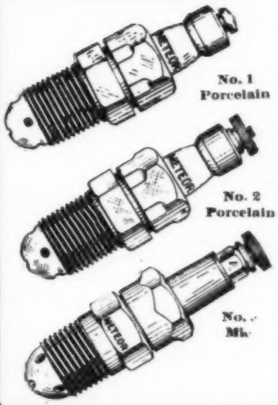

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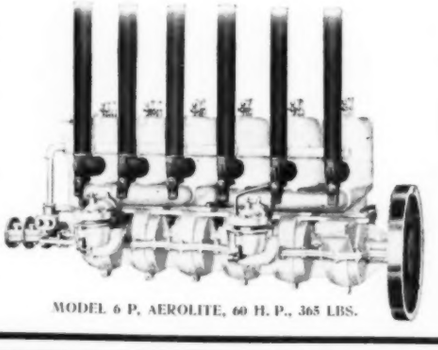

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THE NATIONAL MAGAZINE OF MOTOR BOATING

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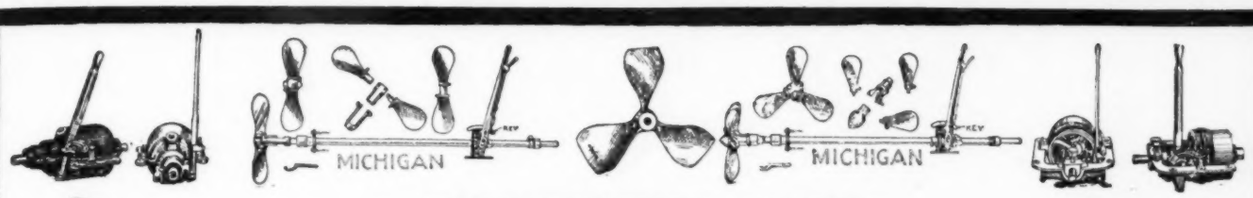

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Don't wait until the last minute to order your new speed wheel, reverse gear and marine hardware; now is the time to order before the rush season, and don't order until you receive our 1911 catalog.

EVERYTHING

For motor boats is our specialty. Our prices are right; the goods the best. We are the largest manufacturers in the world and supply over half the engine and boat builders. Why not you? You want the best there is.

SPECIFY THE MICHIGAN

Speed wheels, reverse gears and marine hardware for your new outfit and have the fastest boat and the latest up-to-date line of goods; it pays. Every dealer, engine and boat builder will be more than pleased to furnish you our line of goods, as they well know the good results.

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There is something you need in our line. Keep up to date. Every year we get up a new line, make big improvements and drop antiquities.

Send for 1911 Catalog To-day

A postal, a letter, brings it to you free, and will tell you more about our goods.

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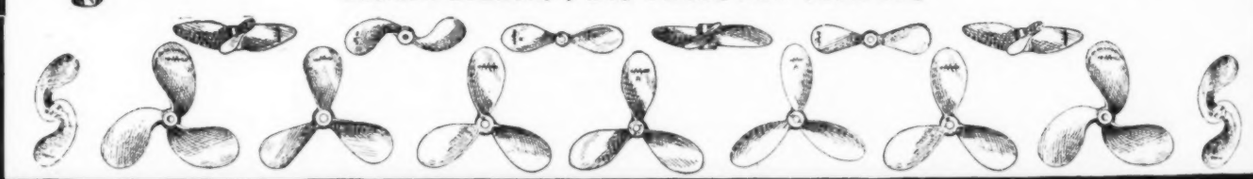
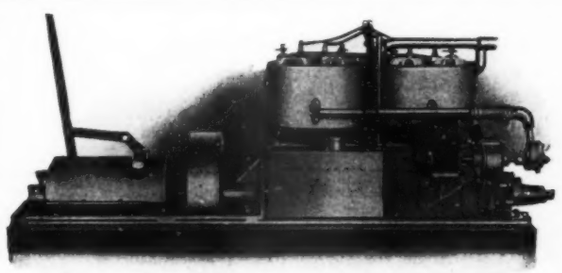




Oakland 20-32

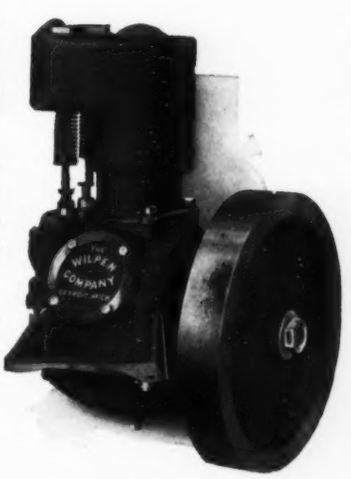
The RIGHT Motor

CONSERVATIVE PEOPLE demand that their boats be equipped with reliable power. All experts agree that the four cycle engine is by far the most reliable and economical type of combustion motor.

Thousands of Oakland engines are in use, and each and every individual user is a satisfied one. The Oakland 20-32 is accurately machined, every part being interchangeable, and every engine long and carefully tested to find, if possible, any latent defects.

The Oakland 20-32 is trim, compact, and the strongest pulling motor of its inches ever designed. We desire representation everywhere, and have some unfilled territory.

The Oakland 20-32 is lower in price than any high-grade motor on the market today.



The Wilpen Company
100-110 Bates St.,
Detroit, Michigan
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Write for Special Demonstration Proposition to Agents. Ask for catalogue

The BRUSHMARINE
3-5 H. P.

Dinner in the Cabin

Is mighty tasty, with an appetite whetted by the sea breezes.

PYRO MARINE STOVES

Prepare a banquet or a snack. They are specially adapted for marine use, give the maximum of heat and are unaffected by the vibrations or unsteadiness of the boat.

Light Compact
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Constructed of galvanized cast iron, with burners and tanks of brass, they are absolutely rustless. A guard-rail fitted to each stove prevents the sliding of cooking utensils. Three sizes, prices $5 to $13.

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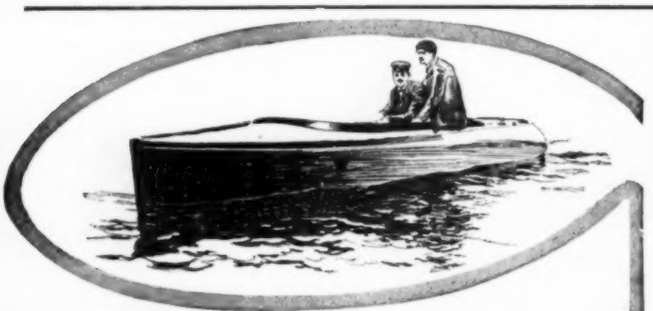


This Engine Lasts As Long As The Toughest Boat

THE "Perfection" is essentially the longest-lived marine motor built. It just thrives on hard work such as ferrying, towing or big pleasure jaunts and keeps at it year in and year out without a murmur. It needs hardly any attention. With a good flow of gasoline and a lively spark, it will keep working away at a great old rate and you can fold your arms, lay back and enjoy yourself.

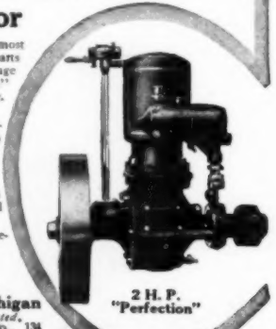
"Perfection" Marine Motor

The "Perfection" is all its name implies right down to the most insignificant detail. It is simple and has comparatively few parts but every detail has been closely scrutinized and brought to a stage of perfection making improvement impossible. The "Perfection" therefore runs smoothly, is powerful and yet easy to operate. Any man, woman or child can run it without effort.

Experienced users of engines at once recognize in the "Perfection" the ideal qualities. They enthuse over the fact that there is no excessive vibration or "pounding." All you hear is a steady smooth purr and you can feel every stroke making speed under you.

We build "Perfections" in 2, 2½, 3½, 4, 6 and 8 H. P. in the single cylinder engines, also 7 to 30 H. P. in the 2, 3 and 4 cylinder engines.

Prices range from $40 to $450 according to type and horsepower. Write for catalog.

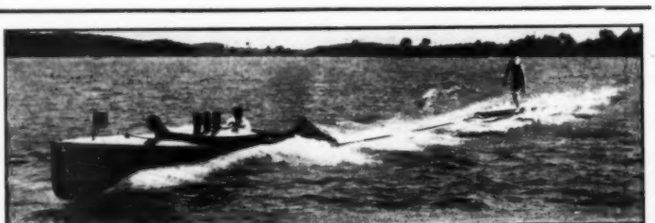


2 H. P. "Perfection"

Caille Perfection Motor Co.
103 Caille Street Detroit, Michigan

Send for our Stationary Kerosene Engine Catalog if interested.

Engines carried in stock by Bruns, Kimball & Co., 134 Liberty St., New York, N. Y.; Gibbons & Stream, 213 Canal St., New Orleans, La.; Woodhouse Gasoline Engine Co., Seattle, Wash.; Geo. G. McLaughlin Mfg. Co., Boston, Mass.; The Marine Engine Supply Co., Los Angeles, Cal.



The Aquaplane

A REAL JOY RIDE

A brand-new water sport has come into existence. So thrilling are the sensations produced by the **Aquaplane** that it will be found in use in connection with nearly every motorboat, launch and yacht capable of 8 miles an hour or better. The **Aquaplane** gives birth to an exhilaration that is not far short of speed intoxication. Get an **Aquaplane** and learn what fun really is. The **Aquaplane** will last forever, and the price is only $2.50. Send for our Circular—Tells how to enjoy the **Aquaplane.**

THE AQUAPLANE CO. (Not Inc.)
Room 315, Roanoke Bldg. Chicago, Ill.

For use on Yachts, Steamships, etc., and in Yacht Clubs, Steamship Offices, etc.

The
"CHELSEA"
(Patent applied for)
Automatic Striking
SHIP'S BELL
The basis for operating is the world renowned
"CHELSEA"
Ship's Bell Clock
Outfitted with the (Patent applied for) electric attachment

On Yachts and Steamships, the big bell forward is operated by the "Chelsea" Striking Ship's Bell Clock, located in the cabin or pilothouse. The tongue of the bell is left free, so it can be operated by hand in fog.

Just what Yachtsmen Have been waiting for

PRICE LIST
(Not including Clock)

For bell, relay, magnet, boxes, switch and wiring diagram.

Sizes stated are diameters of bells

Size of Bell	Price List
5¾ inches . .	**$75.00**
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To these Prices add the Price List of any size and style of "CHELSEA" Ship's Bell Clock intended to be used.

To parties purchasing any one of above outfits, we will outfit any "CHELSEA" Ship's Bell Clock now in use with the (patent applied for) electric attachment, free of charge, thus avoiding necessity of buying a new clock.

Any good electrician can complete the wiring and supply the batteries.

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16 State St.
BOSTON, MASS., U. S. A.

Makers of exclusively 8-Day, High Grade, Marine, Ship's Bell, Mantel and Auto
CLOCKS
ASK YOUR DEALER, NAVAL ARCHITECT OR ANY USER

COLUMBIAN

"THE WHEELS THAT WIN"

ACE II Fastest boat at Palm Beach won TIME PRIZE with a Columbian and a 100 horse power Sterling Engine. Speed 32 miles per hour.

T and S Winner of $2500 GRAND PRIZE for endurance, made fastest time with a Columbian and a 100 horse power Sterling Engine, 31 miles per hour. Wheel arrived too late for race.

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"PROPELLERS IN A NUT-SHELL"
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DESCRIBING OUR EXCLUSIVE LINE OF
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This Splendid Baby Book-Free

How Can An Expectant Mother Put Herself In The Best Physical Condition For Baby's Coming?

How Can She Make The Layette Most Serviceable?

How Shall The Accouchement Chamber Be Prepared?

Baby's coming is an event and the preparations cannot be too embracing and complete. "The New Baby" is the title of a practical guide for expectant mothers. It is written by such well-known physicians as Thos. M. Achen, M.D., Wm. M. Stowell, M.D., and Stephen O. Storck, D.D.S. They tell the proper diet, exercise and clothing for the mother, and the feeding and hygiene that baby needs, etc., etc. One interesting chapter is entitled "Schedule of Baby's Day for the First Three Months." In another chapter, a prominent maternity nurse tells how to prepare for the accouchement. The suggestions for the layette, baby's accessories and utensils, etc., are from one of the largest manufacturers of such articles.

"The New Baby" is not a big and cumbersome volume filled with dreary technical terms. It is written in a simple and interesting style and tells directly what to do and what not to do. The information is authoritative. The suggestions are practical. It is a book of real value—one to which you will refer again and again, and this book will be given you—FREE—by

Good Housekeeping MAGAZINE

Thousands of women will tell you, "No matter how many other magazines I may have, I must have GOOD HOUSEKEEPING." In it they find the best of entertainment for their leisure hours, as well as facts and suggestions that will be of real value to them in the management of their household. It aims to be—and is—an active factor in transforming a mere house into a home. Its influence is felt on every side—the kitchen, the sewing room, the nursery or the library. There are recipes for the first, hints and hows for the second and third, and really good fiction for the last. This then is the aim of GOOD HOUSEKEEPING MAGAZINE—to be cheery and entertaining, but above all to be a positive and practical help in the solution of "Home-making problems."

Merely Do This:

To secure this splendid magazine for four months, and with it "The New Baby" as a premium—FREE—you need merely sign the coupon, and mail it to us to-day with 50 cents—AT OUR RISK. You will be entered to receive the next four issues of GOOD HOUSEKEEPING MAGAZINE and with it the free premium book. The first thing is to sign the coupon now.

GOOD HOUSEKEEPING MAGAZINE
381 Fourth Avenue
New York City

SIGN HERE, TEAR OFF AND MAIL NOW

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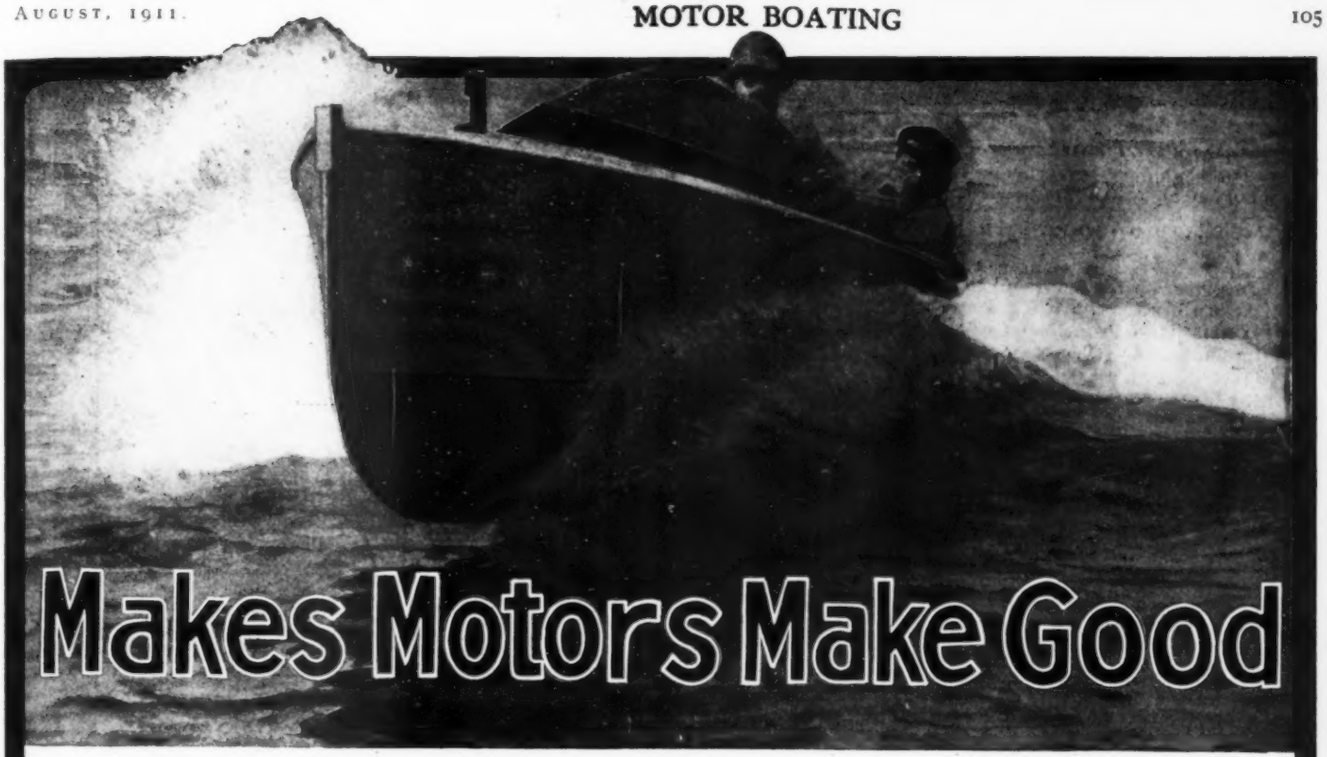
City.....State.....

GOOD HOUSEKEEPING MAGAZINE,
381 Fourth Avenue, New York City
Send me your magazine for four months and your book "The New Baby"—FREE.
Herewith I enclose 50c at your risk.

When writing to advertisers please mention MOTOR BOATING, *the National Magazine of Motor Boating.*



Makes Motors Make Good

PERFECT lubrication will do more to "make motors make good" than anything else. The right cylinder oil will increase the efficiency of the engine in your boat; it will increase mileage to the maximum and reduce maintenance cost to a minimum by maintaining the oil film over all moving parts to which it is applied, thus reducing friction to the lowest point.

Inferior oils will not do these things—in fact they cost more per mile, no matter how much less they cost per gallon.

In the first place, inferior oils are not made from the right crude oil, and next, they are not refined and manufactured by the process that makes them perfectly efficient for motor cylinder lubrication.

LUBROLEINE MOTOR OIL "makes motors make good." It is a motor oil for which there is no substitute—the result of its continued use everywhere proves it to be without a peer. It is the one cylinder oil that will produce the perfect lubrication so essential to your engine—that will add horsepower, increase mileage, reduce maintenance cost, and eliminate friction to the vanishing point—all because it is made from premium Pennsylvania crude oil and manufactured and refined by a process that conserves the lubricating qualities and keeps the motor free from carbon.

Let us prove how to **make your motor make good.**

Send for our booklet,
"The Mission of Lubroleine"

FISKE BROTHERS REFINING CO.

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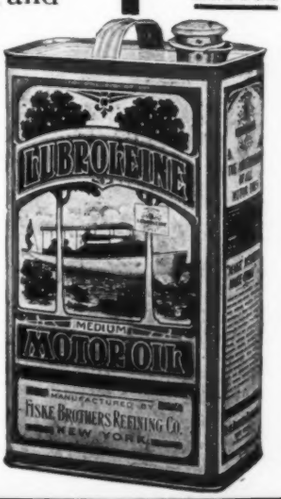

CHAS. E. MILLER
New York City
Distributor for
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Newspapers with Big Circulations

AN advertiser who is spending hundreds of thousands of dollars each year and carefully tracing results, said: "Each year I am cutting down the number of newspapers I use and adding the money saved in this way to my appropriation which goes into metropolitan papers of large circulation — because I have found that results are doubled and often tripled from the same amount of money spent. Take any newspaper with a circulation around 400,000 a day (which means easily a million readers) and you are reaching nearly everyone in that community. It makes little difference whether you are advertising a luxury or a necessity. Out of that enormous number of readers you are bound to get big returns."

In covering New England there is only one newspaper that has a circulation both Daily and Sunday of nearly 400,000. That paper is the BOSTON AMERICAN. Starting at a time when people demanded that a newspaper must fill every need in both news and special features, the BOSTON AMERICAN crept up to — equalled — and then far out-distanced all other New England newspapers in circulation. Advertisers were not slow to realize what a market place the BOSTON AMERICAN offered for their product, and as a result you will find in its columns today the advertising of all the successful local and foreign advertisers.

This is the day of big men — and large enterprises. Success comes to them because they go at things in a big way. And when it comes to their advertising appropriation, it's the big newspapers that make their campaign a success.

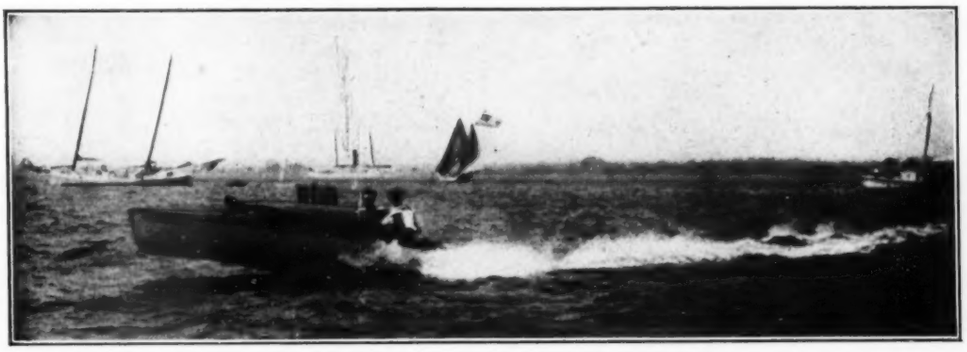
If you are not following along these lines you cannot compete successfully with them.

THE BOSTON AMERICAN

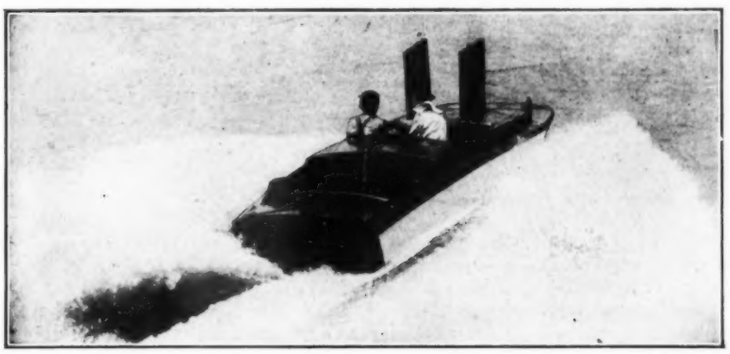
LARGEST CIRCULATION IN NEW ENGLAND, DAILY AND SUNDAY

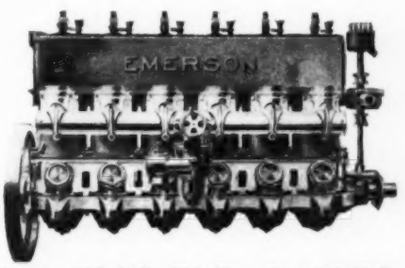
Fastest 20, 21 & 26 Footers in the World

In Actual Competition



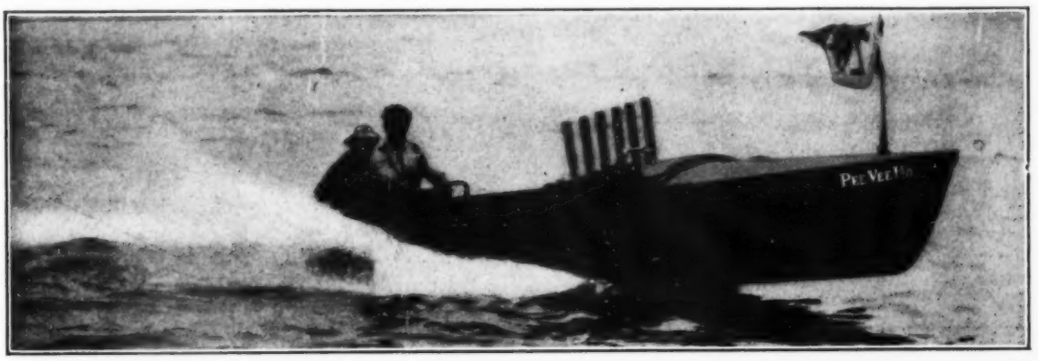
"Sandburr II," fastest twenty-footer in the world. Her six-cylinder Emerson drove her to an average time in three races at Cambridge, Md., June 21-22, of 35.9 m.p.h. Winning three firsts and $2,500 in silver trophies. An American record for any boat in competition. Five hairpin turns in each race. Better than 37 m.p.h. on the straightaways. Also at Atlantic City, July 4, won easily averaging 30 m.p.h., and breaking world's records for her class.





100 to 125 H.P. 325 lbs., 60 to 70 H.P 225 lbs.

"Furlong," fastest twenty-six footer in the world. Powered with two Emerson six-cylinder racing motors. Time over the Government measured course at Washington, May 26, 42.7 m.p.h. This is the fastest boat ever launched in America. 41.3 miles in sixty minutes.



"Pee-Vee-Ho," winner of the Philadelphia Yacht Club race, June 17, by 3 min. 50 sec. over nearest competitor. The fastest twenty-one footer in the world. Time for 12 mile course 29.31 m.p.h. In heavy sea and against strong tide. This boat has shown 37.9 m.p.h. with three in the boat. Her six-cylinder Emerson turns a 20 x 36 wheel 1,250 r.p.m. On July 4 at Norristown, won first at rate of 34.2 m.p.h., breaking world's records for her class.

At Boston on July 4th, the twenty-foot "Kajeruna" with an Emerson six-cylinder, won first money prize and silver championship trophy, making the fastest time ever made in New England, and breaking world's records for her class.

It takes an Emerson to beat an Emerson

Write for Catalogue "S"

The Emerson Engine Co., Inc.

Alexandria, Ga.

J. R. Westerfield, 1737 Broadway, N. Y. Representative

Gray Motors Ready for Immediate Delivery

The above photo taken a few days ago at our factory, gives you an idea of how well prepared we are to take care of your ***Rush Orders.***

There are always a certain number of people who put off ordering their motor until the very last minute.

These last minute orders generally come piling up all in a bunch—***"must have motor at once"—"season almost gone"—"can you ship immediately"*** — etc., etc.

The smaller manufacturer, on account of limited facilities, and those who build marine motors as a side line only, find it almost impossible to cope with the situation caused by this mid-season last-minute-rush.

Not so with us.

The big Gray plant has been preparing for this same rush for the past two months.

Our enormous facilities enabled us to build up in advance a goodly stock of motors in all the different sizes listed in our catalog.

Over 600 engines carefully finished—inspected—tested and crated with complete outfits ready for immediate shipment and the factory humming along and turning out 40 to 50 more per day.

If you happen to be one of the number who have decided you want a motor for this season get out your ***Gray Catalog***—pick out the engine required—send in your order today and the engine will be shipped immediately—the same day order is received.

Get Our Big Catalog

If you haven't a Gray catalog write for one at once.

You'll find it very complete and full of valuable marine engine information—and the right kind of a guide from which to select your engine.

And you won't take any chances in ordering your engine from our catalog—you get an engine with the reputation of a reliable manufacturer behind it—an engine that has won its reputation and high standing on past performances alone.

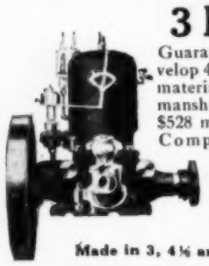
There is still time to get a good season's enjoyment out of a motor boat if you act at once—the whole transaction of getting our catalog—ordering the engine and getting it installed will take but a few days—but it's up to you—you must act quickly.

THE GRAY MOTOR CO. HAS ALWAYS BELIEVED IN ADVERTISING PRICES IN PLAIN FIGURES

3 H.P.

Guaranteed to develop 4 h. p. Same material and workmanship as our $528 motor. Complete outfit ready to install

$60

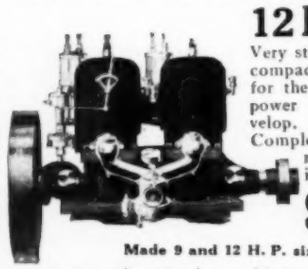


Made in 3, 4½ and 6 H. P.

12 H.P.

Very sturdy and compact. Noted for the excess power they develop. Complete outfit ready to install

$188



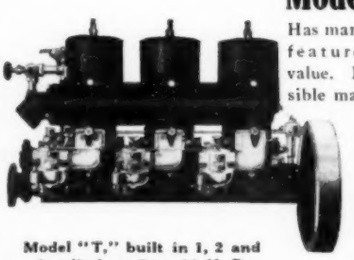
Made 9 and 12 H. P. sizes

Model "T"

Has many exclusive features of great value. Most accessible marine engine ever built. Complete outfits

$115

and upwards



Model "T," built in 1, 2 and 3 cylinders, 7 to 36 H. P.

Made in the largest and most up-to-date plant in the world devoted exclusively to the manufacture of Two-Cycle Motors

GRAY MOTOR CO., 822 U.S. Motors Bldg., DETROIT, MICH.

Canadian Gray Motors Ltd., 822 River Front St., Walkerville, Ont.

BE PREPARED

Protect yourself against the loss or damage caused by striking hidden rocks and wreckage, or from burning, sinking, collision and many other disasters, by taking out a policy that covers the usual risks of the boat owner.

Insurance Company of North America

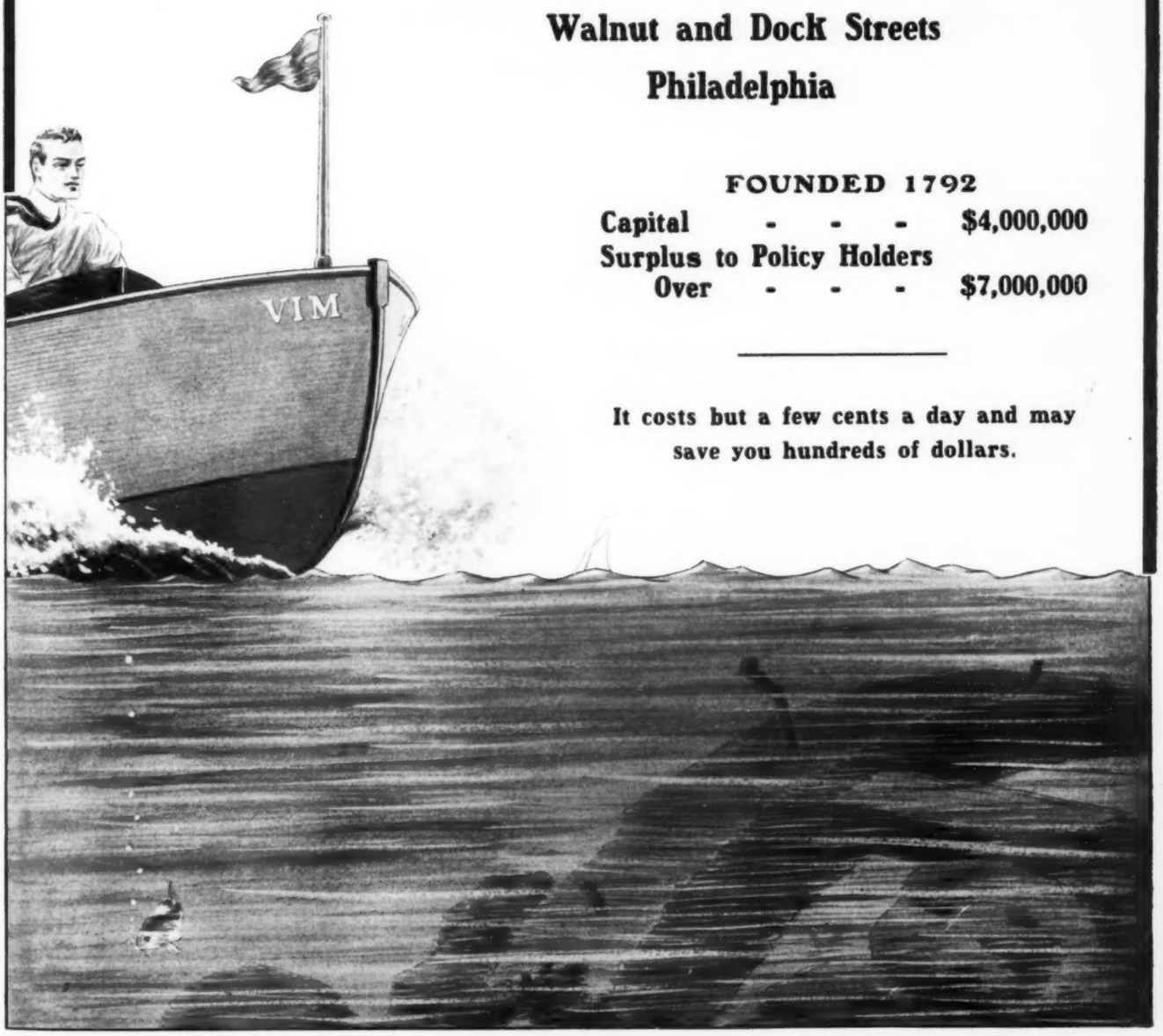
Walnut and Dock Streets

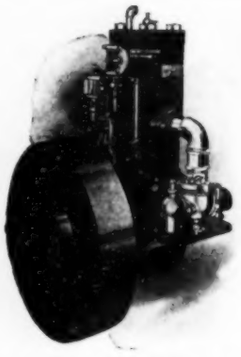
Philadelphia

FOUNDED 1792

Capital - - -	**$4,000,000**
Surplus to Policy Holders Over - - -	**$7,000,000**

It costs but a few cents a day and may save you hundreds of dollars.





5 1-2 H.P. Heavy Duty Eagle Engine.

EAGLE ENGINES

The Best from Every Point of View.

The engine illustrated is the most economical, most durable, most powerful two cycle heavy duty engine for its horse power rating ever designed and manufactured. This model turns a Hyde Turbine propeller 3-blade, 20 in. diameter, 24 in. pitch, at 450 revolutions per minute. Its durable construction permits of constant use, and with the individual and exclusive methods we have provided for oiling, it will with care last many years. This type of engine has exceptionally long bronze bearings, and with a construction you will not find in any other make.

This engine is sold complete with the highest grade of equipment for salt water use at $135, and we guarantee it to be the best engine ever made at any price.

We have fourteen other sizes applicable to pleasure or working boats, our catalog describes and illustrates each model. It also contains a lot of technical information that is worth your while. Yes, catalogs are sent free upon request.

THE EAGLE COMPANY, 98 WARREN ST. NEWARK, N. J.

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This $200.00 Motor Boat---FREE

18 feet long. Seats 8 people. Fully equipped. All ready to step into and run.

This "Auto Craft Special" is 18 feet length, beam 4 feet 6 inches, draught from 6 to 14 inches. Speed 8 miles per hour. Power furnished by 3 H. P. Ferro Motor, 1911 Model, with complete equipment. Frame oak and rock elm. Decking, ceiling and seats of clear oak, natural finish. It is in fact the regular "Auto Craft Special," exactly as made, equipped and sold by the Cleveland Auto Boat Manufacturing Company for $200.00. The Boat is all ready to put into the water and run —without costing you a cent.

How You Get It This splendid boat will be given—absolutely free—to the man or woman who sends **MoToR BoatinG** the most subscriptions between June 1st and August 31st, 1911. All you need to do is to introduce the magazine among your friends. Every subscription will count, whether secured from present subscribers or new friends.

MoToR BoatinG is the biggest and best known motor-boat magazine. It is handsomely published, profusely illustrated, and has all the news of the motor-boat world, either as a sport or as an industry. Every item—technical or otherwise—that can possibly interest the man who owns a boat, or wants to, is fully covered. The subscription price is $3.00 per year.

We will Pay For Your Time! Every order—in addition to counting toward securing the boat—will also give you a large cash commission, to be deducted before sending the subscription, plus a guaranteed salary, ranging up to $250.00 per month, according to the number of subscriptions you send in. Careful record of each subscription will be kept and at the end of each month your salary check will be mailed to you. This is one of the times when you can't lose—you have every opportunity to win the boat, but whether you do or not, the commission and salary are in themselves handsome pay.

What To Do To-Day First tear off the coupon, sign it, and mail it to us now. A complete equipment of sample copies, prospectus, order blanks, etc., together with full details and instructions, will be mailed to you at once—without any charge whatever. But don't wait to hear from us. Start right out to-day and get your first orders. Every day counts—begin *now* by signing and mailing the coupon.

SIGN THIS COUPON AND MAIL IT TO-DAY

MoToR BoatinG:
I will try to win the Motor Boat you offer for securing subscriptions to your magazine. Please send me a free outfit.

Name.....
Street and No.....
City or Town.....
State.....

MoToR BoatinG
381 FOURTH AVENUE NEW YORK CITY

WOLF'S HEAD OIL

NO ONE CAN MAKE A

WOLF'S HEAD OIL

POOR-OIL-PROOF-MOTOR

WHETHER your motor is well lubricated, whether it is kept cool, whether the Cylinders, spark plugs and valves are kept free and clean from carbon deposits—depends on the quality of Cylinder Oil used.

WHAT IS THE BEST CYLINDER OIL?

You are presumably not a chemist.

You presumably have no laboratory and no means of testing oils.

A practical test will tell you—but too late.

It will *not* tell you until the damage and annoyance have been done.

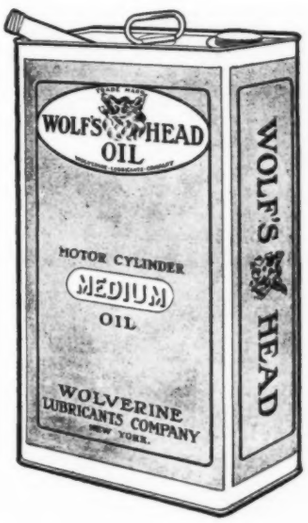
GAS ENGINE & POWER CO.
AND
CHARLES L. SEABURY & CO.
Consolidated
Morris Heights, N. Y. City,
April 25th, 1911.

To all Owners and Users of "Speedway" Motors:—

We have made a very careful and thorough test of Wolf's Head Heavy Gas Engine Cylinder Oil, manufactured by the Wolverine Lubricants Co., of New York City, and believe it to be the best oil on the market for the lubrication of our motors.

We therefore take pleasure in recommending the use of this oil to all owners and users of "Speedway" motors.

Very truly yours,
GAS ENGINE & POWER CO.,
(Signed) B. SCRIMGEOUR.



DIXIE IV.

April 28, 1911.

WOLVERINE LUBRICANTS COMPANY,
80 Broad Street, New York.

Gentlemen:—

I beg to state that in our new boat Dixie IV, which we shall race this season in the World's International Motor Boat Races, nothing but your Wolf's Head Heavy Crystal Oil will be used.

We have tried nearly every oil manufactured, but find this oil gives us the very best results.

This quality of oil was formerly manufactured for us by your President, Mr. Tomlinson, and we would not feel confident of getting the same oil, regardless of its name, unless it were produced under his personal supervision.

Yours very truly,
(Signed) FRED. K. BURNHAM,
Vice Commodore,
Motor Boat Club of America.

HOW ARE YOU TO DECIDE?

Read the above letters—*the laboratory has been furnished—the testing has been done for you—the results are here given.*

If the Gas Engine & Power Co. and Charles L. Seabury Co. Consolidated, who have the wellfare of hundreds of motors and an enormous financial investment at stake, deem it wise to advise their many customers to use Wolf's Head Oil, that fact should be convincing proof that Wolf's Head Oil is best for you.

WOLVERINE LUBRICANTS COMPANY,
OF NEW YORK

80 BROAD STREET, NEW YORK

CHICAGO	PHILADELPHIA	BOSTON	ATLANTA	WASHINGTON
3506 So. Morgan St.	119 North Front St.	224 Milk St.	184 Marietta St.	525-527 Colorado Building

W. P. FULLER & CO., Agents all Pacific Coast Cities, Australia and New Zealand

The Wheel that Leads the World

In Speed, Design, Reputation

Guaranteed to Increase Speed 1 to 3 Miles per Hour

The Product of Speed Wheel Experts

Technically and practically correct. Manufactured by a firm whose market has for years been world-wide. Prospective users are urged to inquire of motor boat owners who use the B. & B. propellers. We stand on past performances. *Your* satisfaction and comfort depend on the wheel you use. *Do not delay your investigation*, write for catalog today. We also make a complete line of launch fittings, fog bells, etc. A descriptive catalog will be sent upon request. Some vacant territory open for dealers. Perhaps we do not have an agent in your locality. Write for dealers proposition.

BRYANT & BERRY COMPANY, 31-35 West Atwater St. **DETROIT, MICH.**

A Detroit Oiler never forgets

You have to do the remembering for ordinary oilers and lubricators.

You have to remember to turn them on or your engine will run dry—

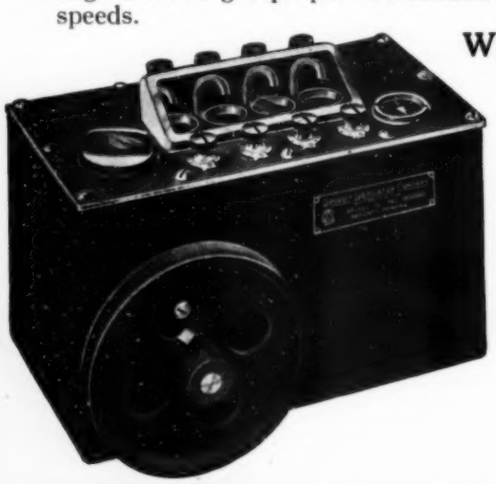
Remember to turn them off or you'll waste oil—

Remember to adjust them constantly or your engine won't get proper lubrication at different speeds.

A Detroit Force Feed Oiler **remembers** to do all these things **for you.**

It starts and stops with the engine. When the engine goes faster the Detroit feeds more oil. At half speed the oiler delivers only half as much oil.

Always exactly the right amount of oil **and no more** without any attention whatever from you.



Write today for the new Detroit Oiler Catalog

It tells all about gas engine lubrication and the kind of lubrication the Detroit Force Feed Oiler gives—sure, dependable, economical, automatic lubrication that never requires any attention at all.

There is a Detroit Force Feed Oiler for **every** gas engine—marine, stationary, automobile and tractor.

They are made in capacities from 2 pints to 5 gallons and with from 1 to 30 feeds. Pulley, ratchet or gear drive.

There is a Detroit Oiler for **your** engine.

Detroit Force Feed Oilers are furnished as standard equipment by most manufacturers of high grade gasoline engines. Others are glad to furnish them when specified.

Write today for catalog P-64 and full information, stating what kind of an engine you have.

DETROIT LUBRICATOR COMPANY.
DETROIT, U. S. A.
Largest manufacturers of lubricating devices in the world.

To Motor Boat Owners

¶ *Why?* *run the risk of sustaining severe injury in cranking your engine?*

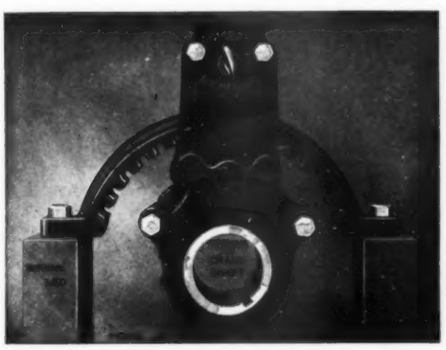
¶ *Why?* *lose your temper after several futile attempts to "catch the spark?"*

¶ *Why?* *become warm with overexertion in bending over in cranking your engine?*

¶ ***When the "LOMBARD" Safety Gas Engine Starter will entirely eliminate such discomforts and make motor boating a pleasure.***

¶ We are the **only** manufacturers of an **absolutely** Safety Gas Engine Starter that is **GUARANTEED FOR LIFE** and sold at a nominal price.

¶ ***Compare our Starters with any other on the market—with the simplicity of its installation, the ease of its manipulation and the low cost of purchasing.***



Model "A"—$12.00 F.O.B. Rochester

¶ ANY MODEL SENT *on a* TEN-DAY TRIAL *on* RECEIPT *of* PRICE. MONEY REFUNDED IF NOT SATISFIED.

¶ ***We make a Model "D" that is larger than Model "C" to be used on engines from 3 1-2 inch bore to 10 inch bore.***

Model "B"—$15.00 F.O.B. Rochester

¶ ***Model "A" occupies 2 inches of shaft space and can be installed on the shaft in front of the clutch, or if there is 2 inches of shaft protruding beyond the flange of the fly wheel, in front of the fly wheel. This model can be installed on engines up to 200 H. P. irrespective of bore or multiple cylinders.***

Write for Literature "MB"

DEALERS WRITE FOR OUR ATTRACTIVE PROPOSITION

Model "C"—$15.00 F.O.B. Rochester

¶ ***Model "B" is bolted to the fly wheel with three bolts, and can be installed on any engine up to 200 H. P. irrespective of the bore or multiple cylinders.***

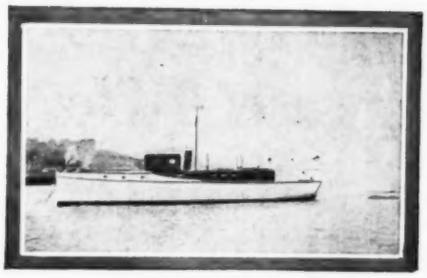
¶ *Model "C" permits the starting of the engine from any position in the boat convenient to the operator —as we supply the rope in any length over 9 ft. at a slight additional charge. This model is attached like Model B on any engine up to and including 3½" bore.*

The Lombard Manufacturing Co.

ROCHESTER, N. Y.

Buffalo Powered, "Corsair" Wins International Race!

New Boat Proves the Reliability and Speed of Her 24-H.P. BUFFALO Heavy Duty Engine by Defeating All the Fast Cruisers of the Pacific Coast in 232-Mile Race From Vancouver to Victoria Via Seattle, Although Her Rated Horsepower Was Less Than That of Any Boat in the Race — Save One.



"CORSAIR"

"CORSAIR," owned by Commodore B. F. Jacobs of Tacoma, is to-day the champion cruiser of the Pacific Coast.

Her power plant is a 24-H.P. BUFFALO heavy duty engine.

In the long distance race of the Pacific International Power Boat Association, "Corsair" covered the 232-mile course—Vancouver to Victoria via Seattle—in 22 hours and 30 minutes.

This is the fastest time and the *best showing* ever made by a boat in a long distance race on the Pacific Coast.

"Corsair" not only won the race, but she made *fastest time* and won first prize in class "C"—three cups in all.

Now it may be quite true that one fast boat doesn't prove the superiority of a particular make of engines any more than that one swallow makes a summer.

All that any one engine can do is to hold the glare of the spotlight on its builders long enough for the public to ask, *"Is this machine a freak among its kind, or is that what you can expect every time from an engine of its name under similar conditions?"*

THAT IS THE QUESTION WE WANT YOU TO ASK ABOUT BUFFALOS.

Determine for *yourself* whether this engine's performance was due to lucky chance or to the premeditated plan known as BUFFALO QUALITY.

We do not ask you to buy an engine simply on the strength of what "Corsair" has done. Look at the thousands of other BUFFALOS that are doing just as good work *every day*, but have never happened to come into the limelight.

Look them over in detail. Talk to the men who run them, and *then* decide.

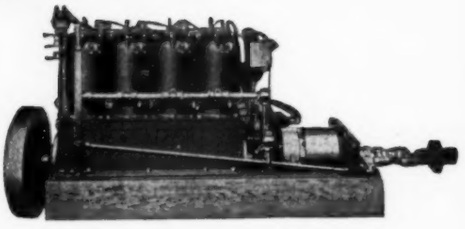
Meanwhile it would be well to get the BUFFALO BOOK in order to become familiar with all of the 23 models of Regular Type, High Speed and Heavy Duty engines—2 to 225-H.P.—that make up the BUFFALO Line. It comes for the asking.

"The Engine of Constant Service"

BUFFALO GASOLENE MOTOR CO.
1204-16 Niagara St., Buffalo, N. Y.

Your Protection and Safeguard

LAMB ENGINES



THEY are the beacon lights of motor boating. They represent, and are the perfect quality of marine engine construction.

They are solid, stable, built for hard usage—the kind of marine engine that the motor boatman needs, and always finds to be all that a high grade marine motor ought to be.

READ CAREFULLY THE LAMB ENGINE SPECIFICATIONS and then send for the Lamb Engine Catalogue.

CYLINDERS—Cast separately, water jackets fitted with hand holes, walls ground, medium duty and high speed, 5¼ in. bore, 6 in. stroke; heavy duty, 6⅛ in. stroke, 7 in. stroke.

CRANK CASE—Large hand-hole plates, end disk removable.

WATER CIRCULATION—Bronze, long-stroke plunger pump. Water piping has expansion joints. Water bypassed around cylinder head joint.

REVERSE CLUTCH—Planetary type. Direct cone drive ahead; for reverse gears in action, gears steel on bronze pinions; encased in oil; same speed astern as ahead. Only two adjustments. Control led to forward end of motor.

IGNITION—Jump spark; Splitdorf or Bosch Magneto, when specified; controls led to forward part of motor.

CYLINDER HEADS—Removable; valve caps polished brass.

CRANK-SHAFT—One-piece open hearth steel, milled, turned and ground; fly-wheel end tapered.

LUBRICATION—Positive mechanical oiler, driven by ratchet from cam-shaft; oil carried to each wearing part; centrifugal oil rings used on crank shaft.

PISTONS AND RINGS—Trunk pattern; 3 rings on medium duty type; 4 rings heavy duty type; ground.

INTAKE BRANCHES—Give a direct and easy flow of gas; fitted with hand-hole plates.

CARBURETER—Schebler; controls led to forward part of motor; hot-air intake.

VALVES AND VALVE MECHANISM—Both on one side. Thoroughly water-jacketed. Valve and stem forged from one piece. Lateral adjustment on push rod. Rod actuated by link and roller of hardened steel. Guides long and removable.

CONNECTING RODS—Annealed malleable iron H. cross-section. All connecting rods except on 13 H. P. are fitted with 4 bolts; each bolt fitted with 2 nuts and cotter pins.

Send for Catalogue, Address Department "M"

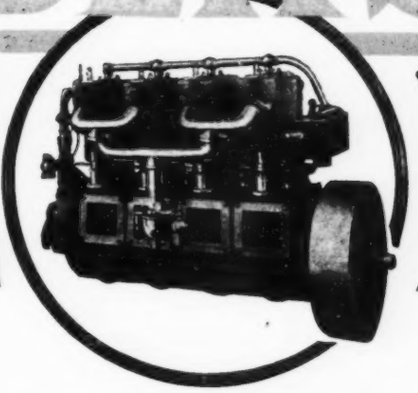
Lamb Engine Company of New York
Eastern Distributors
30 Church Street, New York City

Lamb Boat & Engine Company
Members N. A. E. & B. M.
Clinton, Iowa

N81
A
C

ANDERSON

MARINE ENGINE



Hush!
Listen!

Hear It
Pur-r-r-r

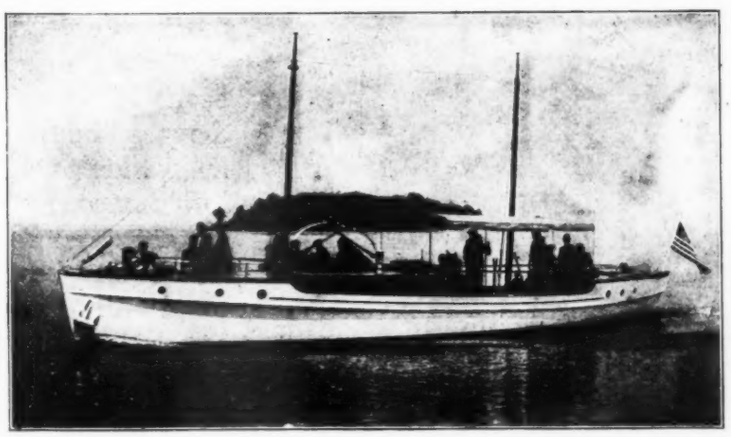
No laboring and snorting—just a gentle purring that seems to say—"The pleasure is all mine—I love this work—Enjoy yourself, for I am on the job."

Such, Gentlemen, is the Anderson Marine Engine. The four-cylinder four-cycle gasoline engine without the Noise.

A full 7-inch bore with long-stroke motor enables you to "get away" instantly, and the faster and farther you go, the more pleasing the Pur-r-r-r. Is also made in sizes 2½ H.P. single to 150 H.P. six-cylinder.

Write for the story of the Anderson Marine Engine. Learn why motor boat people take the Anderson, and how much "saving" they effect.

ANDERSON ENGINE CO. : : Shelbyville, Ill., U. S. A.



"Tillamook" 58 X 12 Cruiser, delivered to D. C. Whitney, Detroit, Mich., May, 1911.

OUR past endeavors must show that we have obtained the confidence of those whom we have already served. No contract is completed until the customer has received full satisfaction from his purchase. We have received the confidence of clients who have bought the fourth, fifth, and sixth cruiser from our yards.

The cruiser in the accompanying illustration, is the fourth built by us for Mr. Whitney. We cite the following letter recently received:

"It may not be amiss at this time to let you know how well pleased I am with my boat. From past experience with your firm I had expected the highest class of work, but, nevertheless, in my new boat, if there was room for improvements, you have certainly taken advantage of it and have left nothing in the way of firstclass workmanship to be desired. Also I wish to assure you of my appreciation of all the pleasant business relations during the period of construction which I have learned go a long way toward the satisfaction of building and owning pleasure craft.

Yours very truly, (Signed) *David C. Whitney.*"

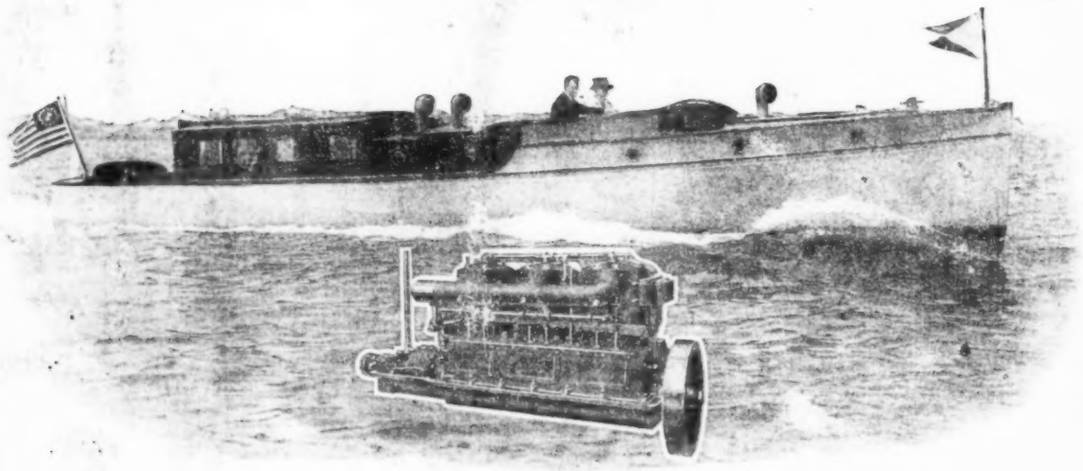
Every order must make good. ***ASK ANY OWNER.***

THE MATTHEWS BOAT COMPANY, Port Clinton, Ohio

STERLING

THE ENGINE OF REFINEMENT

FOR THE FINEST BOATS THAT FLOAT



D. C. PERCIVAL & CO.
JEWELERS BUILDING

May 19, 1911.

Sterling Engine Co.,
Buffalo, N. Y

← READ THIS

Gentlemen:-

In regard to the 6 cylinder 6½ x 8 Sterling engine which I recently purchased from A.P. Homer, would say that I have been running same in a launch 50 ft. x 8 ft., designed by Homer and that both the engine and boat have given complete satisfaction.

I am at present getting speed of 18 miles an hour, running the engine at 570 revolutions and by putting on a smaller wheel and allowing the engine to turn up nearly its designed speed, I expect to get more speed out of the boat.

The engine runs very smoothly and I find that the longer I run it, the faster it will turn up and it runs perfectly cool all the time.

Would say at the end of a 100 mile run the other day, I timed my boat, towing a tender at the time with considerable water in it, and found I was getting 18 miles an hour, with the engine going 570.

Yours truly,

Lawrence F. Percival

STERLING EXCLUSIVE FEATURES

MECHANICAL OILING SYSTEM, WATER JACKETED EXHAUST MANIFOLD, EXPANSION JOINTS IN ALL WATER CONNECTIONS, ADJUSTABLE PUSH RODS AND MECHANICALLY OPERATED VALVES ON OPPOSITE SIDES, ONE PIECE LOWER BASE CONTAINING CLUTCH AND REVERSE GEAR ASSURING PERFECT ALIGNMENT, OIL GROOVE AROUND BASE TO INTERCEPT DRIPPINGS AND PREVENT SAME FROM SPREADING TO ENGINE ROOM FLOOR, THUS ASSURING CLEANLINESS AND A BILGE FREE FROM OIL AND GREASE, SINGLE BOLT CONSTRUCTION AND MANY OTHERS

MANY OF THE EXCLUSIVE FEATURES ARE COVERED BY OUR PATENTS. THESE AND THE METHOD OF CONSTRUCTION, INSPECTION AND TESTING USED BY THIS COMPANY MAKE STERLING ENGINES THE BEST POWER OBTAINABLE FOR ANY TYPE OF BOAT

DISTURBER II WINS 40-FOOT CHAMPIONSHIP 20-MILE RACE, AND BREAKS ALL RECORDS AT DUBUQUE. SHE IS EQUIPPED WITH TWO 130 H. P. STERLINGS.

8 H. P. TO 240 H. P.

Ready for Immediate Shipment

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ROCHESTER—HALL GIBSON CO., 67 CLINTON AVE., S.
CHICAGO—CHICAGO BOAT & ENGINE CO., 1508 MICHIGAN AVE.

STERLING ENGINE COMPANY

1254 Niagara St., Buffalo, N. Y.

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